DECEMBER • 1959

FIREMEN

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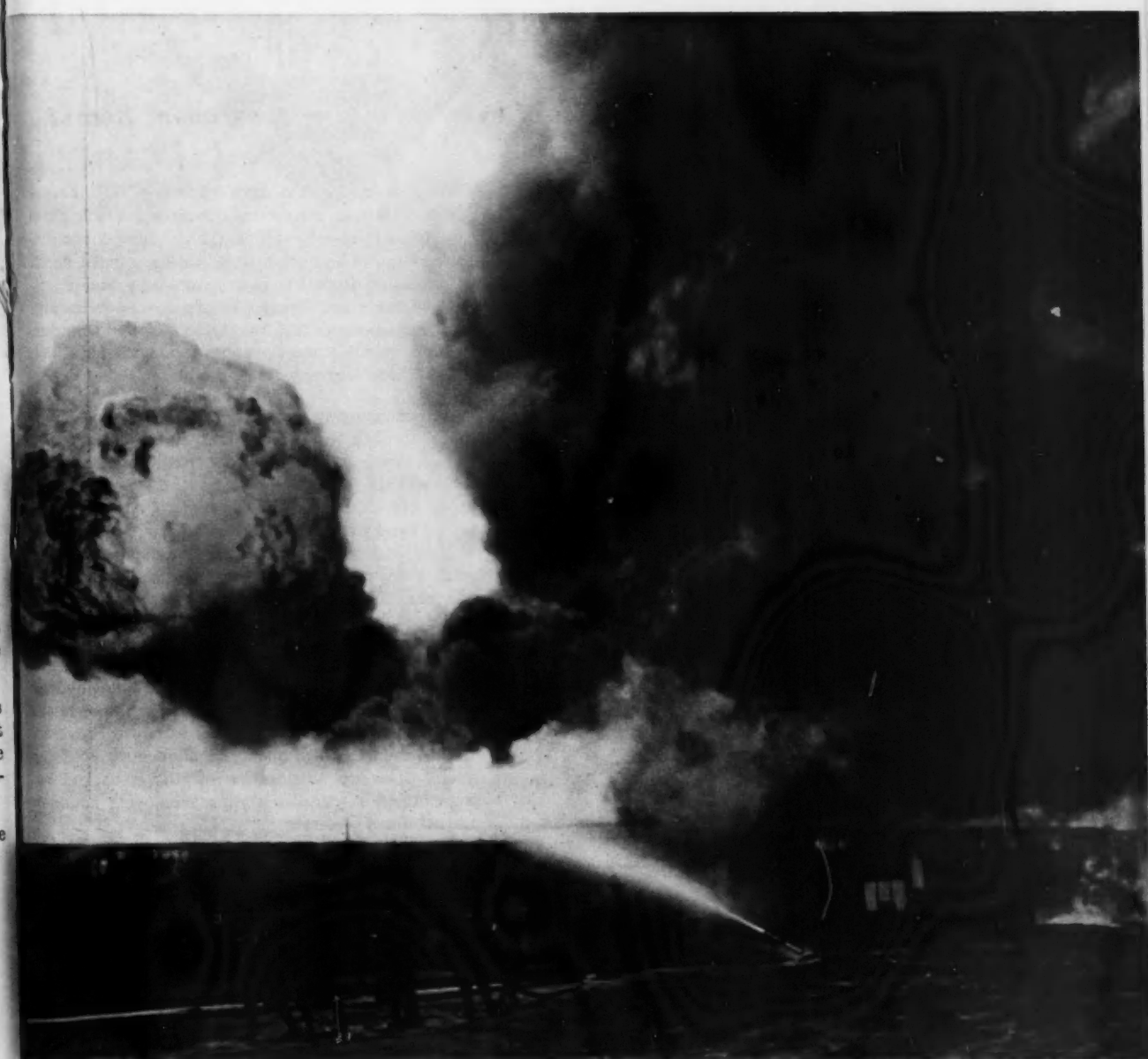

Warren C. Zapp

Warehouse Fire in Jersey City — *see page 9*

TIONAL FIRE
ROTECTION
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64th
year

SOME SCHOOLS ARE SAFER! › › › *Page 10*

FIRE BEYOND CONTROL! › › › › *Page 15*

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Select-O-FLOW

- Maintain accurate stream characteristics at all gallonage positions.
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- Underwriters' approved.
- Non-clogging—no screen required.
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Merely turn dial indicator and select variable gallonage from 60 to 125 G.P.M. at 100 p.s.i. without shutting down the line.

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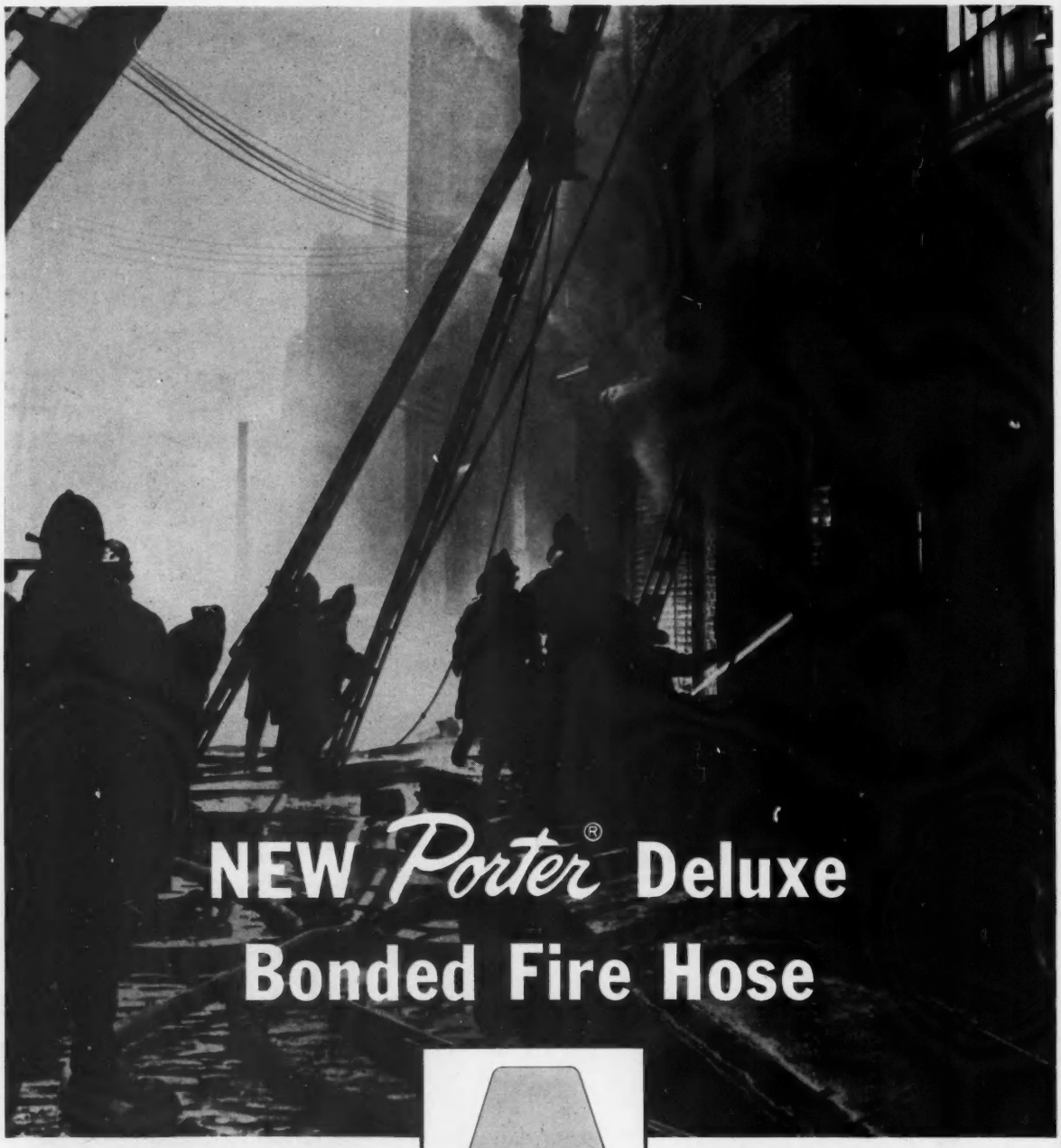
More than half a century of fire fighting progress



NEW *Porter*® Deluxe Bonded Fire Hose

. . . eliminates need for drying.

You don't have to stock spare hose for use while another load is drying. The new Porter Deluxe Bonded Fire Hose doesn't need drying-out.

It's made with a rubber bond between the two jackets of DuPont "Dacron" polyester fiber, which laughs at mildew. Pack it away soaking wet without the fear of deterioration that is common to cotton-jacket hose.

A rubber-bonded double jacket of "Dacron" all around is the secret behind the new mildew-proof Porter Deluxe Bonded Fire Hose.

And drag new Porter Deluxe Bonded Hose to test its scuff-resistance! At least five times more wear can be put on this remarkable hose before the two bonded jackets begin to show it.

Ask your Thermoid distributor to show you a length of the new Porter Fire Hose with the all-"Dacron" bonded jacket. Or write *Thermoid Division, H. K. Porter Company, Inc., Tacony and Comly Sts., Philadelphia 24, Pa.*

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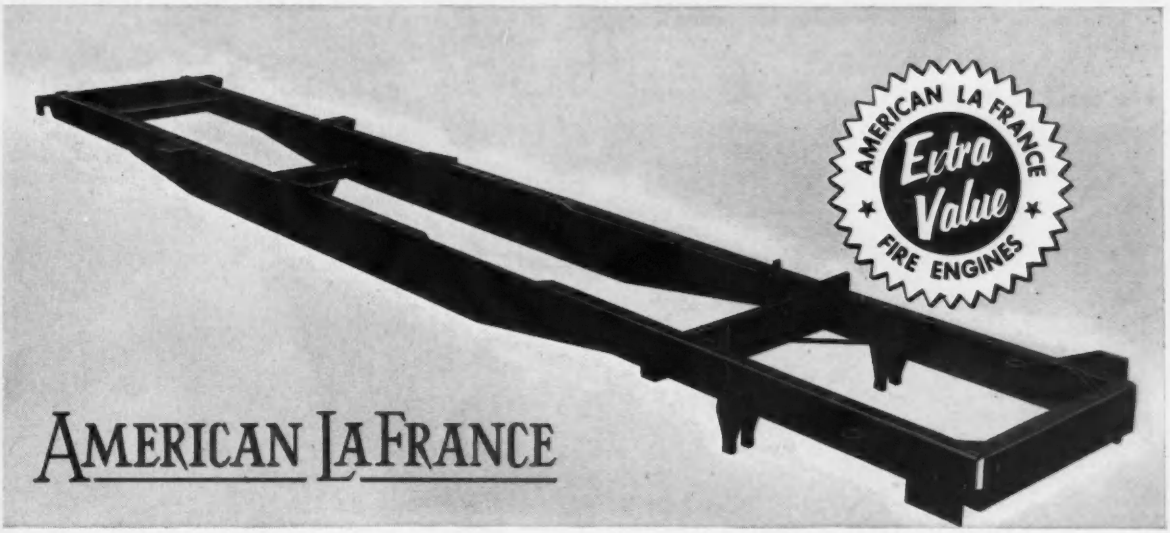

Chassis frame in new 900 Series is heavier, stronger, more rigid . . .

The 900 Series pumper chassis frame incorporates important improvements to provide more strength, safety and rigidity. The greater stiffness (section modulus 10.15) means less deflection with full load on the roughest streets and less "working" of the sheet metal and body enclosures.

The frame side rail section is "fish belly" type with 10½ inch depth between the front and rear springs. All cross members and stiffening gussets are electric welded to provide a maximum of torsional strength and retain correct alignment under all operating conditions.

The "unitized" frame construction is one of the many American LaFrance Extra Value features. The design improvements include a deeper front cross member of "wrap around" construction at the front end of the frame side rails. Each of these Extra Value features are standard construction with American LaFrance.

The frame material is carbon steel (.17 – .25 carbon) without heat treatment. Heat treatment does not increase or affect the frame stiffness, only permits greater deflection of a lighter section. The greater frame section provides more stiffness and rigidity with a big factor of safety for full loading.

The SPARTAN, 1000 g.p.m. pumper

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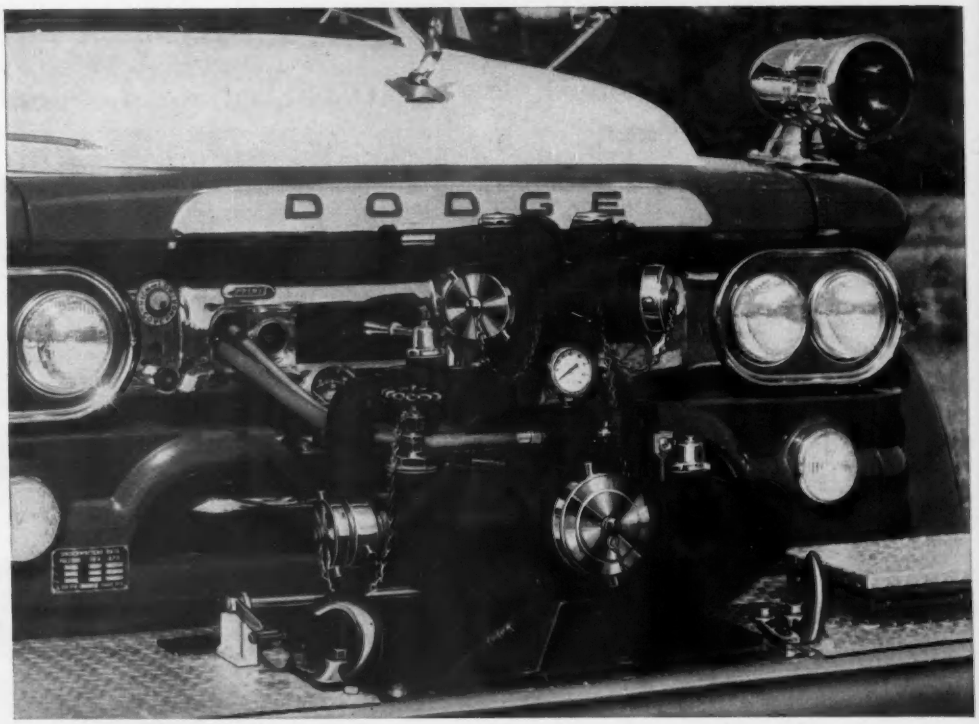

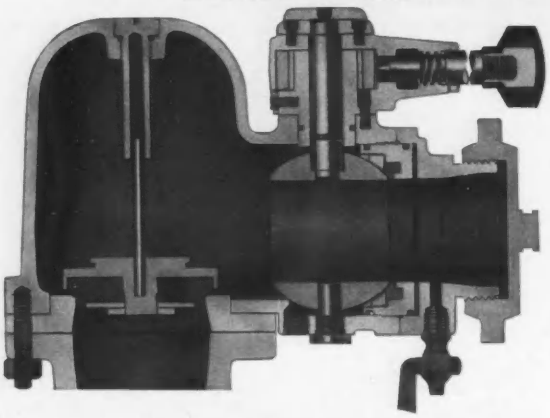

BARTON-AMERICAN UA-50 Front Mounted Pumps

now offered with

BALL-TYPE LOCKING VALVES

Time-Proven Check Valve Retained

Barton-American ball-type locking valves move into position for any capacity or volume you need — lock in that position with a quarter turn of the handle.

The UA-50 gives you all the advantages of front mounted location: You can fight fires *on the move* with two or more hose lines. With drive wheels on solid ground you can "nose" down to pond or stream to draft water inaccessible to midship pumpers. Front pumps weigh less, use no body space . . . you can carry more water and equipment.

Precision built of best materials — yet *costs less* to buy and install because it's simpler. Investigate the Barton-American Type UA now!

You get these advantages in the UA-50 Ball-type Locking Valve:

1. **Smooth-as-silk operation.**
2. **Regulates volume as you want it.**
3. **Locks positively in any position.**
4. **A quarter-turn of the handle locks it.**
5. **Check valve eliminates need to close hose lines to prime pump.**
6. **Rugged, heavy-duty construction.**
7. **Modern, smooth appearance.**

You also get UA Pump features such as: *Exclusive,* positive interlocking pump clutch that can't slip at a fire; both volume and high pressure to 400 pounds for effective fog streams; fast, reliable, engine vacuum primer; effective, frost-proof construction; plus many other UA advantages.

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FIRE PUMP COMPANY

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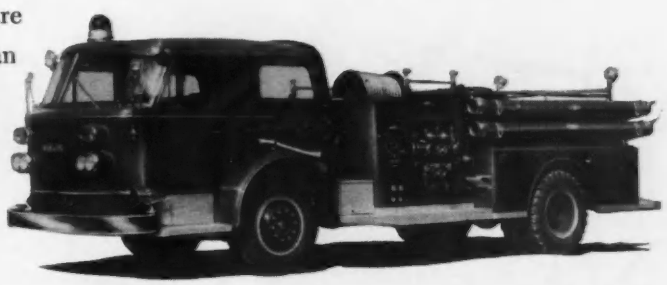
Shock Absorbers both Front and Rear!

AMERICAN LA FRANCE Extra Value FIRE ENGINES

Stability and safety of vehicle operation is of paramount importance for emergency service. Shock absorbers at both front and rear axles are Extra Value features standard on all American LaFrance fire apparatus. They provide a maximum of operating safety and control under all road conditions.



Front mounted shock absorbers have long been recognized as essential to maintain steering control. Rear mounted shock absorbers not only add to the control, but create increased road stability plus greater safety for the men and equipment. Specify this Extra Value feature for greater safety and ride control.

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Our Valued Friends
in the Fire Service

A HAPPY HOLIDAY SEASON

Chief Powhatan

DURA-FOG
Select stream by sight or touch — clicks into straight stream or fog — shock absorbing shut-off — no kick-back—rubber bumper.

SUPER-FORGE
Drop forged brass couplings — light weight — non-corrosive — durable — available in 1½" and 2½".

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FIREMEN

A monthly magazine published for the fire service members of the
National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

Volume 26 • Number 12

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When fire involved nine storage warehouses on the outskirts of Jersey City on September 9, Warren C. Zapp, a professional photographer who has worked with that fire department for years, was on hand to record the action with a camera. He sent to FIREMEN magazine three exceptional, full-color pictures which show in remarkable detail the tremendous fire problem which fire fighters had to face that day. Today's costs allow us to reproduce only one of these pictures and it appears on this month's cover. To supplement this, we feature a story of this fire and the unusual operations of the fire department under extremely difficult conditions. (*See page 15.*)

We hope that the cover picture serves as a reminder for fire department photographers that FIREMEN magazine and the NFPA Fire Record Department are continually seeking excellent photographs of fire ground action and of incidents which illustrate some lesson of fire protection, fire prevention and fire control. We hope that the story reminds fire chiefs that the NFPA is always interested in obtaining fire department reports of significant fires.

●

A year ago, the world was shocked at the news of the tragic school fire in Chicago, Illinois. In the United States, subsequent days, weeks and months brought intense public reaction to this fire, and, in many communities, substantial progress was made in school fire protection. The progress, however, was counterbalanced by a lack of progress. To give you "both sides of the picture," we have included in this issue a digest of a special study by the NFPA Fire Record Department. (*See page 10.*)

●

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Once again, it is time to consider the record of fires involving Christmas trees and decorations. Because fire departments are aggressively promoting the cause of fire safety during the holiday season there has been a consistent drop in the number of these fires since 1950. Last year, the 650 fires that involved Christmas trees and decorations was the lowest number ever reported to the NFPA Fire Record Department. These fires caused a loss of approximately $642,000 or about $989 loss per fire. Exactly 501 cities reported this special fire experience to the NFPA Fire Record Department. Actually, the record for the past nine years reads: 1950 — 1,200 fires; 1951 — 1,200; 1952 — 1,000; 1953 — 1,150; 1954 — 750; 1955 — 900; 1956 — 800; 1957 — 700; 1958— 650.

Despite this encouraging trend, fire departments are well aware that the Christmas season and the first months of winter bring the greatest number of loss of life fires and, accordingly, the public must be warned continually of the hazards of this season.

enclosed

√ new exit facilities

panic

SOME SCHOOLS ARE SAFER!

√ stairways

√ fire alarm systems

hardware

ARE YOURS?

√ automatic sprinklers

IN ONE year major or minor fire hazards in 53,000 public school buildings in the United States have been corrected. There are now approximately 63,500 U. S. public schools which meet minimum basic standards to assure adequate life safety from fire.

Still, more than 50 per cent of the public school children — about 18 million youngsters — are needlessly exposed to fire hazards!

These are some of the findings in a detailed survey conducted this year by the NFPA Fire Record Department. They are based on questionnaires sent to member fire chiefs of the Association who gave outstanding cooperation in providing requested information on the progress or lack of progress in their respective communities. A complete report of the survey is planned for the January, 1960 issue of the NFPA *Quarterly* and special copies of the survey will be sent to every fire chief who responded to the questionnaire.

These are some of the highlights of this survey:

The lives of some 4,500,000 children in U. S. public schools are significantly safer from fire than they were on December 1 last year.

Another 9,700,000 children are attending public schools in which some life hazards from fire have been reduced.

With more than 16,500 schools making major improvements during the past 12 months, there are now approximately 63,500 U. S. public schools which meet minimum basic standards to assure adequate life safety from fire.

Here, then, is some measure of the impact which the Chicago school fire made on communities across the nation. The fire protection improvements in schools ranged from minor to major changes. An example of the conscientious approach to the school fire safety problem in some communities is the thorough program conducted in Spokane, Washington, as reported on page 19 of this issue.

Despite such positive achievements the NFPA's survey also shows lack of progress such as:

No needed improvements in life safety from fire have been made in about 30,000 schools housing 8,250,000 children.

In 36,000 schools housing 9,700,000 children where some fire hazards have been corrected, conditions are still below the minimum basic standard needed to assure that these children escape safely in case of fire.

While more than 17 million public school children are being taught under reasonably fire-safe conditions, there are still about 18 million children needlessly exposed to fire hazards.

Nearly all communities have acted on such matters as better and more frequent fire exit drills, tighter control of waste disposal, inspections, and proper storage of combustible supplies. While these are of substantial importance, the survey points out that because of human frailty they can be classed only as temporary improvements. It is encouraging to note, however, that people gave sufficient attention to fire safety to approve spending for items such as these:

In 6,055 school buildings all stairways were enclosed.

In 1,075 buildings complete automatic sprinkler systems were added.

In 9,435 buildings new exit facilities such as fire escape stairs and additional doors to the outside were added.

In 13,800 school buildings it was necessary to add panic hardware to one or more doors.

In 24,600 buildings improvements or replacements of manual fire alarm systems were made.

In 6,600 buildings combustible interior finish has been removed or coated with a fire retardant paint.

Other improvements covered: 1,700 partial automatic sprinkler systems; 1,175 complete automatic fire detection systems; and 2,820 municipal fire alarm boxes mounted within 100 feet of the school building. Most of these boxes have been connected directly to the building fire alarm, automatic detection and sprinkler systems so that the sounding of an alarm within the building will automatically call the fire department.

Altogether, the survey showed that approximately 68 per cent of all U. S. communities initiated or completed fire safety improvement projects in the 12 months since December 1, 1958. More than 200 school buildings were closed; and about 250 others were closed or had sections closed temporarily. Where does your community fit in this picture of fire safety progress?

Regional Estimates on NFPA School Fire Safety Progress Survey

	Per Cent of Communities Taking Action	No. of Major Improvements to Public School Buildings	No. of Minor Improvements to Public School Buildings
Northeast	70	1,750	5,800
North Central	71	7,600	22,800
South	64	6,500	21,550
West	67	700	2,700

HOW FIREMEN CAN STUDY

"OPERATION SCHOOL BURNING"

During the school fire tests conducted in Los Angeles earlier this year, careful study was made of the travel of heat and smoke and the tenability of various parts of the structure as the fire developed. The findings, presented in the new book "Operation School Burning," (see back cover), should be very important to fire fighters.

By studying the data recorded in this book, it is possible to gain a new appreciation of the build-up of fire effects in measured time intervals. In addition, the reader can get a better appreciation of the effect of fire protection equipment in a variety of fire conditions.

In this article, Leo K. Najarian, Fire Prevention Engineer, Engineering and Investigation Section of the Los Angeles Fire Department, who observed the tests and directed the compilation of data, suggests a method by which fire fighters can make a special study of this important book.

THE purpose of the school fire tests in Los Angeles was to investigate methods of protecting new or existing multi-story, open stairway school buildings to provide a safe environment for school occupants under fire conditions.

The tests included studies of the effectiveness of curtain boards (draft or fire curtains) at stairway openings and in corridors, roof vents over stairways, and complete and partial automatic sprinkler protection individually and in combination. Data was also tabulated on the operation of automatic fire and smoke detection equipment, fusible links and automatic door closers.

Fire and smoke behavior and the effectiveness of each type of protection installed was evaluated from the recorded data. The summary of results in "Operation School Burning" is based on this data. Therefore, in order to understand fire behavior in this school and similar structures, firemen should make a particular study and application of the material in this book.

With this in mind, the following procedure is suggested as one way for firemen to get extra benefit from "Operation School Burning."

1. Read the book completely for a general understanding of the test methods and results.

2. Review Part III critically for its summary of results, discussions and recommendations, and keep these in mind as you proceed with your study.

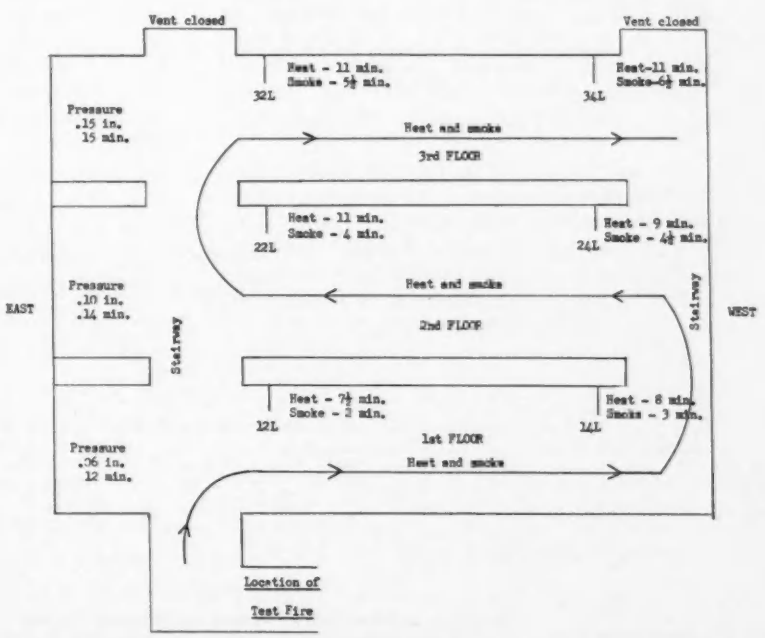
3. Next, study Part I for a background knowledge of the purpose, scope, nature and limitations of these tests.

4. Then, study Part II for understanding of the test building with its instrumentation, fire protection equipment and the test fire.

5. Now, turn to Part IV for detailed information obtained from each test and the conditions prevailing during each test. Included with the data on each test is a graphical presentation of its most significant features. Study these graphs; extract information on smoke and heat untenability; apply this information to a simple diagram of the test building, analyze the fire and smoke behavior by tracing its progress through a sketch for each of the tests.

For example, let us give this treatment to the base criteria fire A-1. From the respective graphs of this fire, transcribe the time required for untenable smoke, untenable heat and maximum pressures to reach each floor, both east and west ends. (See diagram below.) The temperature above the test fire at the time of untenability of smoke and heat on all floors can also be included. The location of these untenable temperatures was determined by selected five-foot level thermocouples on each floor, such as 12L, 22L and 32L for the east end and 14L, 24L and 34L for the west

(*Continued on page 29*)



Here is the sort of sketch that may be drawn from data presented in "Operation School Burning." In this test, untenable smoke conditions were reached on the third floor within 6½ minutes, while the temperature near the test fire was only 300 degrees Fahrenheit. A minute later, the first floor became untenable because of heat. Three and a half minutes after this, the third floor was untenable because of heat, while the temperature near the test fire had risen to 1335 degrees F.

SCHEDULES OF FIRE DEPARTMENTS

The following article was written to answer numerous requests on fire department working schedules now used in the United States. In general, the tables and discussion are presented in the order in which the schedules evolved, from the 84-hour week down to the 48- or 42-hour week. The article will be continued in forthcoming issues of the magazine.

by Warren Y. Kimball, Editor

A MAJOR task of fire department chief officers is to assign men of appropriate rank and qualification in sufficient numbers to the tours of duty so that each essential position in the response group will be covered at all times.

A calendar week of seven 24-hour days totals 168 hours. For administrative and operational purposes, the 168-hour week is commonly divided between two platoons, often designated as A and B. Each of these is responsible for manning first line apparatus for 84 hours per week, although each individual member assigned to a platoon seldom works this number of hours.

There are two ways in which the work week is commonly divided between platoons. In the eastern states most fire departments work day and night shifts (usually a 10-hour day shift and a 14-hour night shift). The platoons rotate from day to night duty at regular intervals by having one platoon work a 24-hour tour while the other is off for 24 hours. (See Table 2.)

Fire departments west of the Appalachians commonly have platoons alternating on a 24-hour on and 24-hour off basis, year round. (See Table 1.)

In many departments that have call or volunteer fire fighters, response groups must be scheduled in accordance with the availability of the men who make their primary livelihood at other jobs. In suburban communities some members work in nearby cities and are chiefly available nights and weekends; other members are available for weekday calls but may go out of town evenings. Some members may work in local industries on certain work shifts and might not be avail-

TABLE 1

Two Platoons — Alternating 24-Hour Shifts

24 Hr.	24 Hr.	24 Hr.	24 Hr.	24 Hr.	24 Hr.
A	B	A	B	A	B

TABLE 2

Two Platoons — 10- and 14-Hour Shifts — 2-Week Cycle — 84 Hours per Platoon

	Sun.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.*	Sun.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.*
Day	A	A	A	A	A	A	A	B	B	B	B	B	B	B
Night	B	B	B	B	B	B	A	A	A	A	A	A	A	B

*Long day for changing shifts from day to night.

TABLE 3

Two Platoons for Call or Volunteer Firemen 12- and 12-Hour Shifts
Regularly Assigned Day or Night Duty with Alternate Weekends Off

	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Sun.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Sun.
Day	A	A	A	A	A	A	A	A	A	A	A	A	B	B
Night	B	B	B	B	B	A	A	B	B	B	B	B	B	B

TABLE 4

Two Platoons — 10- and 14-Hour Duty Tours, Saturday Swing Shift; Rotating Days Off

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.		Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14
											(B Shift off)														(A Shift off)			
A Platoon																												
Captain	●		×		×		×		×		×	×		×		×		●		×		×		×				×	
Lieutenant	×		●		×		×		×		×	×		×		×		×		●		×		×				×	
Operator	×		×		●		×		×		×	×		×		×		×		×		●		×				×	
Fire fighter	×		×		×		●		×		×	×		×		×		×		×		×	—	●	72 off		●	—
Fire fighter	×		×		×		×		●	—	72 off		—	●		×		×		×		×		×				×	
Fire fighter	×		×		×		×		×		×	×		×		●		×		×		×		×				×	
B Platoon																												
Captain		×		×		×		●		×			×		×		×		×		×		●	—	72 off		—	●
Lieutenant		×		×		×		×	—	●	72 off		●	—	×		×		×		×		×		×	×		×
Operator		×		×		×		×		×			×		●		×		×		×		×		×	×		×
Fire fighter		●		×		×		×		×			×		×		●		×		×		×		×	×		×
Fire fighter		×		●		×		×		×			×		×		×		●		×		×		×	×		×
Fire fighter		×		×		●		×		×			×		×		×		×		●		×		×	×		×
Number on Duty	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Hours Worked by Crew	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70

Note: Each member has rotating day off with 72 hours off on weekend every five weeks when day off falls on Friday. Under this plan a 12-man company provides a fireman work force for every tour of duty but vacations and sick leave are deducted from the working force providing a minimum crew of four men. This plan averages 70 hours per week per man.

able for first alarm response during working hours. Under such conditions it is suggested that on weekdays call or volunteer members be assigned regularly to either day or night fire duty.

The two platoons alternate on succeeding weekends so that all members will have every other weekend when they can be away and not subject to first alarm response. In all cases the off-platoon is able to man the reserve apparatus to cover the community when the on-platoon is tied up at working fires. Normally, the shifts change at 6 A.M. and 6 P.M. or 7 A.M. and 7 P.M., to provide the least interference with the regular employment of call and volunteer firemen. (See Table 3.)

Aside from call or volunteer firemen, fire fighters are not expected to be on duty for first alarm response a full 84-hour week covered by their platoon. Under the 10- and 14-hour day and night shifts and the 24-hour shifts, certain days off are granted to each member to bring his work week to the designated number of working hours of the department.

For the 10- and 14-hour day and night shifts two methods are used. In one plan each member is given a different day off so that on each tour of duty one or more company members will be off duty when their platoon is working. The table shown above provides an arrangement whereby each member has a day off on an eight-day cycle which provides a different day off each week. A 24-hour swing shift is employed at the end of each week to change platoons from day to night. When

TABLE 5

70 Hours, 5 Days or 5 Nights (12-Man Company)

Long day off used to swing from night to day. 48 hours off used to swing from day to night.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.		Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
Hours Worked	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14	10	14
Captain	(24)		×		×		×		×		×		(48)			×		×		×		×		×	(24)		×	
Lieutenant	×		×		(48)			×		×		×		×		×	(24)		×		×		×		×		×	
Lieutenant		×		×		×	(24)		×		×		×		×		×		(48)		×		×		×			×
Operator		×	(24)		×		×		×		×		×		(48)		×		×		×		×		×		(24)	
Operator	×		×		×		(48)			×		×		×		×		×	(24)		×		×		×		×	
Operator		×		×		×		×	(24)		×		×		×		×			×	(48)		×		×			×
Fire fighter		×		×	(24)		×		×		×		×		×		(48)		×		×		×		×			×
Fire fighter	×		×		×		×		(48)			×		×		×		×		×	(24)		×		×		×	
Fire fighter		×		×		×		×		×	(24)		×		×		×		×			×	(48)		×			×
Fire fighter	×		×		×		×		×		(48)		×		×		×		×		×		(24)		×		×	
Fire fighter	×		(48)			×		×		×		×		×	(24)		×		×		×		×		×		(24)	
Fire fighter	(48)		×		×		×		×		×		(24)		×		×		×		×		×		(48)			×
Total men	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Total hours	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70	50	70

(24) — 24 hours off (48) — 48 hours off × — Work shift

TABLE 6

24-Hour Shifts — Three Platoons

Hours Worked	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Shifts Working	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C

TABLE 7

10- and 14-Hour Shifts — Day and Night — Three Platoons

Day	A	C	B	A	C	B	A	C	B	A	C	B	A	C	B	A	C	B	A	C	B
Night	B	A	C	B	A	C	B	A	C	B	A	C	B	A	C	B	A	C	B	A	C

TABLE 8

Three Platoons — Day and Night Shifts

Day	A	A	A	C	C	C	B	B	B	A	A	A	C	C	C	B	B	B	A	A	A
Night	B	B	B	A	A	A	C	C	C	B	B	B	A	A	A	C	C	C	B	B	B

the individual member's day off comes before the 24-hour off shift of his platoon he starts a new cycle. This provides periodic 72-hour periods of leave. With one rotating day off a week, each member works a nominal 72-hour average week of 6 working days. With this system 6 men are needed on each platoon to provide a nominal 5-man crew. When vacations and sick leave are deducted, the average manpower on duty will be about 4 men. When each member has two rotating days off a week, making a 5-day work week averaging 60 hours, an additional man will be needed on each platoon to provide the 5-man shift on duty if a minimum of 4 men are to be available after allowing for vacations and sick leave. Thus, for the 60-hour week each company must have at least 14 officers and men. These figures are absolute minimums and in busy districts more men will be required.

Some departments working day and night shifts try to avoid a 24-hour swing shift. The way this is done is to assign each member rotating days off which always include the 24-hour swing shift. Table 5 (p. 13) shows such a plan where each member has 24 hours off after his cycle of night duty before going on day duty, and 48 hours off after each cycle of day duty before working nights. As illustrated, when members change from day to night after each 5 tours worked, each member has different days off each week. A company of 12 men provides a nominal on-duty strength of 5 men before absences caused by vacations and sick leave. This amounts to an average 70-hour work week. Where members rotate more frequently, additional company members will be needed. Under this rotation plan there are no actual platoons but officers and members are given different days off so that there will always be an officer, operator and sufficient fire fighters on duty. Under this plan only three officers are required for each company, but on some duty tours two officers will be available so that one of the officers could be detailed to another company lacking an officer on that tour.

A common working arrangement is to have three separate shifts or platoons, each responsible for covering 56 hours which is one-third of the 168-hour calendar week. Where the three platoons work 24-hour shifts, this provides 48 hours off between tours of duty. It takes three days to complete the cycle. The members work 48 hours a week for two weeks and 72 hours a third week, making a total of 7 tours worked in three weeks. (See Table 6.)

It must be kept in mind that each platoon must have sufficient men to provide the required crew, taking into consideration absences due to vacation and sick leave. Thus, a minimum of five men will be needed on each shift of a company to have four men riding, and a safer margin would be six men per shift.

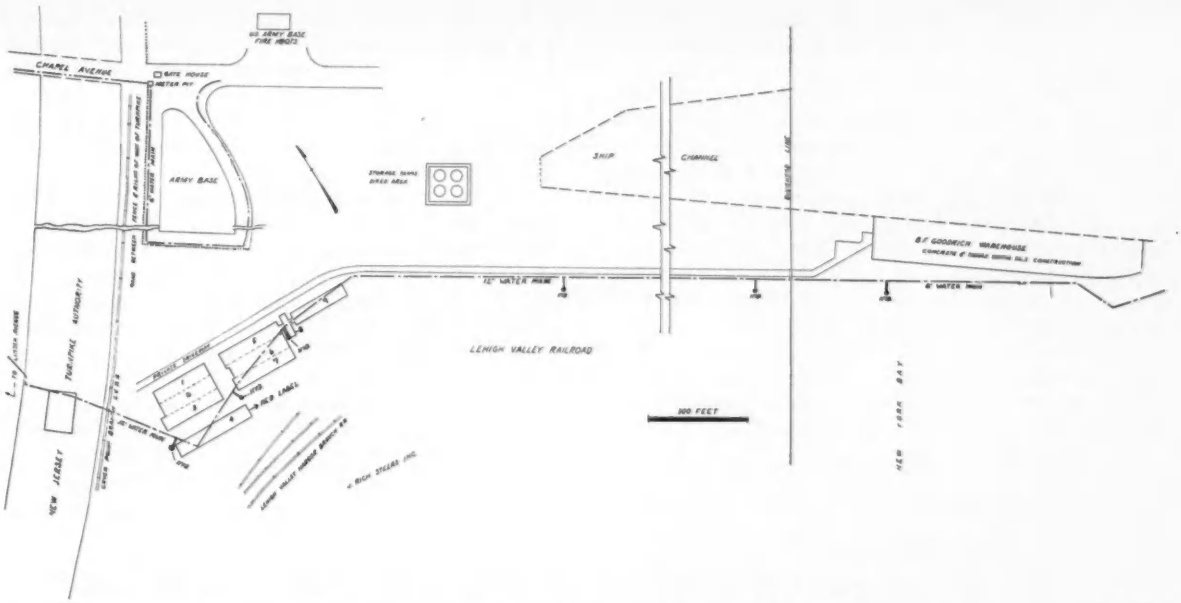
Where the three platoons work 10- and 14-hour day and night tours, the three platoons each work seven day and seven night tours in three weeks. There are seven days in the three weeks on which each platoon does no duty. (See Table 7.)

The arrangement shown in this table has several drawbacks. There are too frequent changes from day to night duty and the schedule never provides more than 24 hours off between shifts. This is corrected by having each shift work two or three consecutive day or night shifts before changing tours.

Table 8 shows three platoons working with shifts rotating after three day or night tours of duty. It will be noted that out of each nine days each platoon works six shifts and has 72 hours off. Days off and day and night duty fall on different days of each week. Also, the long 24-hour shift is avoided. Platoons change from day to night by having 24 hours off. They change from night to day by having 72 hours off. Manpower requirements are the same as in the preceding table. At least 15 company members are needed to provide five men on a shift and a minimum of four men on duty.

Regardless of the hours worked, a great many fire departments prefer to retain the basic two platoon organization for administrative purposes, with each platoon manning the first-line apparatus half of the time. The important thing is to assign enough officers and men to each platoon to allow for days off, vacations and sickness. With men nominally working 56 hours a week, eight men are needed on both platoons to assure at least four men on duty and ten men are needed on each platoon to assure five men on duty.

(*To be continued next month*)



General view of warehouse and surrounding area. The three hydrants on the 12-in. main passing the buildings became inaccessible shortly after fire started. Other hydrants and ship channel at upper right served as water sources. (All sketches based on drawing by Captain Lawrence C. Connin of the Jersey City Fire Prevention Bureau.)

FIRE BEYOND CONTROL!

Jersey City Fire Department faces hopeless task in combating huge warehouse fire. Hazardous chemicals, flammable liquids and distant water supply make tough combination. (Based on a report by Deputy Chief Michael J. Burke and Captain Lawrence C. Connin of the Jersey City Fire Prevention Bureau.)

ON SEPTEMBER 9, the Jersey City, New Jersey, Fire Department, commanded by Chief Thomas J. Maloney, responded to an overwhelming fire control problem. Involved were nine unsprinklered, steel frame (unprotected), corrugated metal-clad storage buildings of the Wheeling Transportation Company, just off the New Jersey Turnpike in the southwestern portion of the city near Bayonne. These warehouses had only front and rear entrances and the storage covered large areas. One building was 120 feet wide and 180 feet long with an open area of 21,000 square feet. The scope and intensity of the fire are illustrated in the picture below and on this month's cover.

Aerial view of warehouse fire. (Wide World photo.)

The unsprinklered warehouses held a variety of flammable liquids and hazardous chemicals, including acetones, ethers, alcohol, methanol, methyl-ethyl ketone, and organic and oxidizing materials. About five hours after fire fighting operations were under way, the fire department learned that Building 6 held a considerable quantity of sodium cyanide. (Monthly shipments of this product averaged twenty tons.)

As pointed out in NFPA No. 49 — "Table of Common Hazardous Chemicals," price 50 cents, cyanides are not flammable, but evolve hydrocyanic acid gas (poisonous) on contact with acids or moisture. This product should be isolated in storage and protected against mechanical injury. Fire fighters should be concerned about poisoning when handling fires involving cyanides, since the hydrocyanic gas can be inhaled when dry cyanides are wetted, or poisoning can be by skin absorption if a cyanide solution is spilled. The use of respiratory equipment is essential.

The combination of flammable liquids and hazardous chemicals, coupled with the limited water supply and operational difficulties, led to a spectacular fire that was far beyond the control of the fire department's equipment and tactics. The spread of fire was rapid and violent, influenced, according to the department's report, by "poor stock subdivision, high piled stock, windows blocked, flammable liquids improperly stored or handled, and poor housekeeping. Stock was on wood pallets with no spacing between walls and stock piles."

(*For the characteristics of flammable liquids mentioned in this story, readers are referred to NFPA No. 325 — "Fire-Hazard Properties of Flammable Liquids, Gases and Volatile Solids," price 75 cents; and to NFPA No. 325A — "Flash Point Index of Trade Name Liquids," price $1.50. These are published separately and are included in Volume I of the National Fire Codes* — Ed.)

The 92-degree temperature and a 10- to 15-mile per hour wind did not make the fire fighters' work any easier. Strong explosions which occurred from time to time broke windows a half-mile away. Power poles and lines were destroyed, the Turnpike was closed for several hours to traffic, and radiant heat affected all buildings and vegetation within a radius of at least 300 feet of the warehouse property. More than twenty fire officers and fire fighters were injured or overcome during twelve hours of continual major fire fighting. Thirty-six hours passed before all fire companies in Jersey City could return to normal response and a watch line was kept on the scene for five days.

Because there were only three hydrants in the warehouse area, with all inaccessible because of the fire and explosion hazards, the Jersey City Fire Department had to resort to lengthy relays. In one drafting operation, a record was probably established when fourteen lengths of 10-ft. suction hose were laid from one pumper to maintain water supply as the tide went out in nearby New York Bay. From the shore line there was a slope of approximately 10 degrees to the ship channel. The operating forces were compelled to walk out to a depth of three (3) feet as the tide receded.

The fire was first discovered by employees in Warehouse No. 4, known as the "Red Label" building. Just outside of this building approximately 35 feet away were fifty 55-gallon insulated containers of ethylene oxide. Stored inside the building were carboys of acetyl peroxide (liquid), more than three tons of benzoyl peroxide (powder) in paper bags, 5,421 pounds of liquid Lupersol DDM methyl-ethyl ketone peroxide in glass bottles and metal drums, and three pounds of Luperco ATC benzoyl peroxide in glass jars.

Shortly after a small thud was heard in this building, one of the employees went outside and came back shouting, "Red Label is smoking." Other plant employees immediately tried to make their way to the hose house approximately 40 to 50 feet from the building. Just about this time, two members of the police emergency division arrived when the first explosion occurred, knocking one of the policemen to the ground. A short time earlier, a citizen, driving on a nearby street, saw smoke coming from the warehouse and pulled a box alarm. Engine Company 13, first responding company, pulled into the warehouse area just after the explosion.

Members of this fire company managed to connect to a hydrant and laid 350 feet of 2½-in. hose through Building No. 5 to the open area between Buildings 1, 2, 3 and 4, all of which were fully involved. Extreme heat and smoke in this area, however, made operations impossible. The hydrant was abandoned and the hose lines were withdrawn.

Fire conditions were severe enough to demand a full three-alarm response plus recall of off-duty personnel. The first alarm had been received at fire headquarters at 12:50 P.M. A second alarm was ordered by the second battalion chief at 12:53 P.M. and eight minutes later the third alarm was ordered by a deputy chief. Off-duty personnel began to respond on recall at 2:10 P.M.

(*To measure the scope of the problem facing Jersey City fire fighters, it is worthwhile to consider some of the characteristics of these materials. Here, for example, are pertinent comments extracted from "Fire Protection for Chemicals," price $3.00, published by NFPA in 1956.* — Ed.)

"Many . . . organic peroxides are both highly flammable and strong oxidizers. Some, like benzoyl peroxide and acetyl peroxide have the additional hazard of being explosives. . . . Organic peroxides should not be stored with either flammable solids or oxidizing agents."

"Benzoyl peroxide . . . in the dry granular form, is liable to explode if subjected to heat by friction or grinding. It is highly flammable and decomposes rapidly at 215 degrees F. and slowly at 165 degrees F., yielding highly flammable decomposition products . . ."

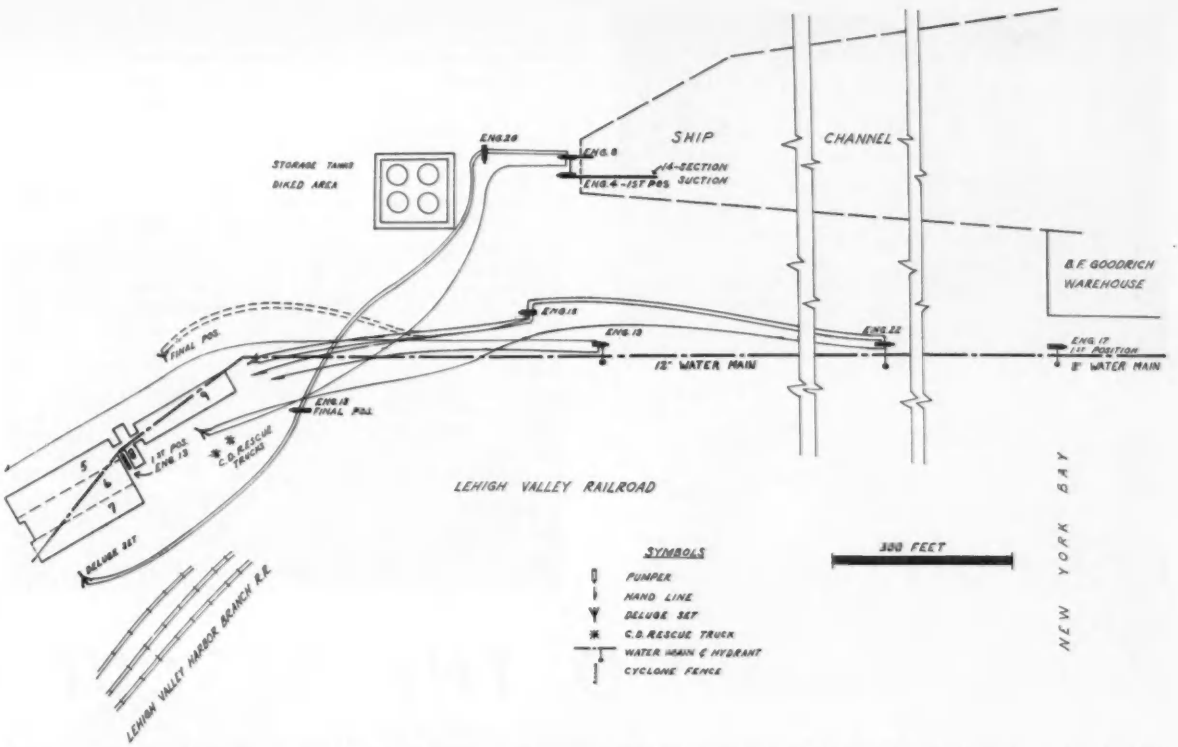
"Acetyl peroxide . . . is an organic peroxide similar to benzoyl peroxide. It is extremely shock sensitive, and will detonate when its temperature is raised to about 172 degrees F. . . ."

"Organic peroxides should be stored in a cool, ventilated place, away from all sources of heat and from all combustible materials."

Present assignments in Jersey City for a fire in this warehouse area call for response of Engine Companies 13, 22 and 19; Ladder Companies 4 and 8; a second battalion chief and Deputy Chief Jules Rifflard on the first alarm. The second alarm brings Engine Companies 8, 17 and 20; Salvage Company 1; Ladder Company 11; and Chief of Department Thomas Maloney. Third alarm brings Engine Companies 16, 15, 4 and 10; Ladder Company 5 and the recall of all off-duty personnel with covering assignments by reserve apparatus.

The fire fully involved Buildings 5, 6 and 7 and the office building 8 shortly after first companies responded. Building No. 9 on the east was only partially involved due to the use of deluge sets placed on each side and hand lines operated into the east end of the building by members of Engine Company 22. These men operated 700 feet of 2½-in. hose in one line and stretched 400 more feet of 2½-in. hose to supply Engine Company 15 on relay, a deluge set and a hand line in the east end of the building.

Altogether the multiple alarm response to this fire brought ten engine companies, four truck companies, a salvage company, an emergency lighting unit (known as Salvage 2), two rescue trucks and a gasoline supply wagon.



Position of apparatus on southeast side of warehouse property. At upper right of this sketch, note that Engine 4 used a 14-section suction line (140 ft. of 6-in. hose). It fed a 2½-in. line to Engine 20, which later drafted through two lengths of suction hose and operated at 150 pounds pump pressure to supply Engine 13 in a relay to a deluge set near Building 4.

Engine 17, responding on second alarm, first supplied a ladder pipe on Truck 4 near Building 9. This position was abandoned due to intense heat, smoke and exploding drums. Engine 17 was then ordered to a position near the Goodrich warehouse (right) and finally to a relay at extreme left.

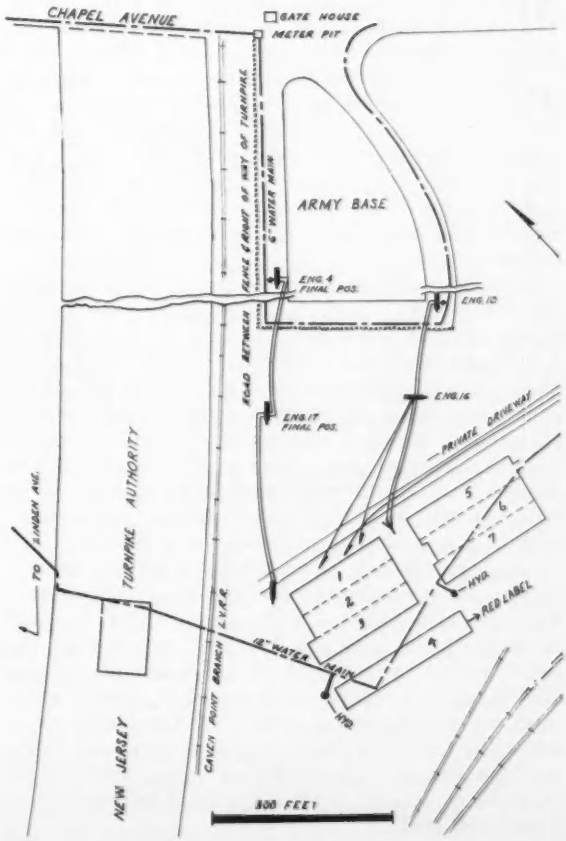
Engines 15 and 22 relayed from hydrant on 12-in. main, with Engine 15 supplying hand lines and a deluge set.

Engine 19, connected to the same main, supplied a hand line and a long single line to a deluge set directed between Buildings 1 and 5.

On this page are sketches showing the placement of apparatus during the critical moments of the fire. For an over-all view of the area refer to the sketch on page 15. The sketch above shows placement of apparatus and lines on the easterly side; the sketch at lower right shows operations on the westerly side.

Some 15,000 feet of hose was stretched and 1,900 feet was lost during the fire ground action. The recall system brought 300 men back to duty, 178 of whom reported to the fire with 122 men being held at various quarters to man reserve apparatus.

(*Continued on page 28*)



On the northern side, Engine 10 first supplied two 100-ft. lines to a deluge set directed between Buildings 1 and 5. It provided 300 pounds pressure (capacity plus 50 pounds hydrant pressure) for two hours, then reduced to 175 pounds for 19 hours. Later, Engine 16 came in on a relay with Engine 10 to supply two hand lines and two lines to a deluge set, with a third line being supplied by Engine 19. (See sketch at top of page.) To the west of these companies, Engines 4 and 17 took final position in working a relay to a turret set up by the crew of Truck 5.

Rescue-ambulance stationed in North Hollywood and especially designed by Los Angeles Fire Department for dual service in San Fernando Valley. *(All photos by Los Angeles Fire Department.)*

One of the Los Angeles Fire Department's emergency trucks which operates in industrial district and carries heavy duty rescue equipment.

LOS ANGELES TO THE RESCUE!

by Cliff Dektar

MANY fire departments are called frequently to provide various types of rescue, emergency and ambulance services.

The Los Angeles City Fire Department provides all three services, including a unique rescue-ambulance combination in a large portion of the city. The department operates five conventional rescue units, two heavy emergency trucks, one squad in the industrial district and six rescue-ambulance units in 213.3 square miles of Division IV which includes the San Fernando Valley.

Captain Walter Babecky, recently retired head of the department's rescue service, recalls that the department's first rescue service started after World War I and was established primarily to help fire fighters overcome by smoke at a fire. Later, both the public as well as the department realized the gratifying results of rescue service and in 1920, the department began to provide actual rescue service with Squad-Rescue Wagon No. 1 at Station 23 on East Fifth Street. The 1915 Moreland truck carried lighting equipment, shovels, gas masks, chemicals and an inhalator.

"Soon rescue calls increased so much that we had to establish a separate rescue unit," says the captain who entered the field of rescue work in 1923. In 1929 the department expanded its rescue service with the establishment of a second rescue squad at the old Hollywood fire station. Subsequently, rescue units were added in the harbor area, West Los Angeles, Van Nuys, the hub of the San Fernando Valley, and southwest Los Angeles. The department placed resuscitators on truck companies in the Tujunga, Venice and Wilmington districts.

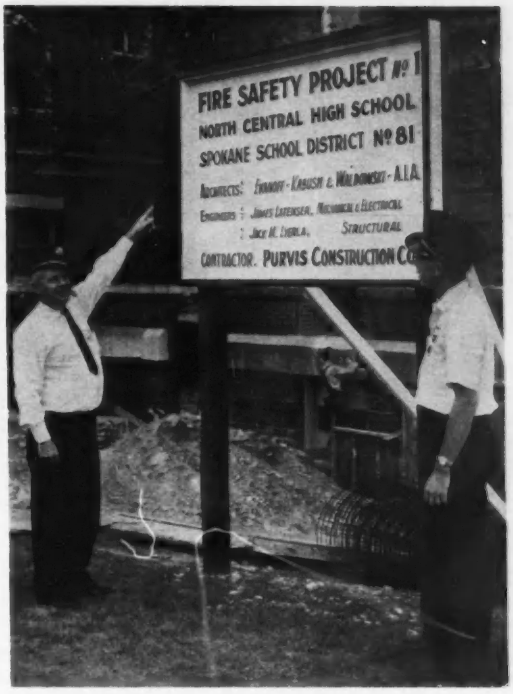
In the early 1950's the population of the formerly rural San Fernando Valley increased rapidly. It is now estimated to be more than 600,000. Residents of the Valley demanded better rescue service and the department established new units in North Hollywood, serving the East Valley, and in Canoga Park, serving the West Valley.

Early in 1956 Administrative Officer Samuel Leask, Jr., was dissatisfied with the ambulance service that was provided under private contract for the Valley area. The Los Angeles Receiving Hospital provided municipal service only in the central part of the city and private companies under contract to the city served the Valley, West Los Angeles and the harbor areas. In 1957, Leask proposed that the fire department establish a rescue-ambulance service in the Valley. On April 4, 1957, the Mayor approved the March 25 action of the City Council appropriating $42,000 for the purchase of six rescue-ambulance trucks to operate from existing fire stations in Division IV. Service would begin July 1.

Since ambulance service was new to the department it required close liaison not only with every department bureau, but also with county, city, civic and private agencies, including Central Receiving Hospital, general and emergency contract hospitals in the Valley, private ambulance operators, supply houses and equipment dealers, the coroner, city attorney, controller, civil service, and other fire departments that operated emergency ambulances.

In conjunction with the medical staff and technicians of Central Receiving Hospital, 82 fire fighters attended a 12-hour advanced course in first-aid diag-

(Continued on page 26)



Deputy Fire Marshal William Hingston and Fire Inspector Hobbs stand in front of sign indicating the school is part of the Fire Safety Project.

TEAMING UP ON SCHOOL INSPECTIONS

Chief W. A. Dunham
Spokane, Washington

As reported in the survey on page 10 of this issue, a number of communities have improved fire protection in their schools during the past year. One of the most interesting reports of achievement submitted to NFPA came from the Spokane, Washington, Fire Department. An inspection team surveyed 80 public and parochial schools and came up with significant recommendations. Within nine months, the people of Spokane approved the needed funds, the recommended improvements were being completed, and the city's schools reached a higher standard of fire safety. Certainly worthy of attention is the excellent cooperation given to the fire department by the school authorities. With the completion of such a program, Spokane has set a standard of civic responsibility worthy of emulation by many other major municipalities.

THE tragic Chicago school fire last December which claimed 95 lives prompted Chief W. A. Dunham of Spokane, Washington and his fire department to take action on the deficiencies that existed in the older schools of their city. Fire department officials decided that a thorough survey of all schools within the city should be made. Its purpose was to determine what improvements were necessary to assure a reasonable degree of safety for pupils and teachers.

The significant part of the Spokane program was the formation of the inspection team. In his report to the NFPA, Chief Dunham said, ". . . it was our feeling that it would be beneficial to have on that team someone from the plant division of the school system so that proper liaison between the fire department and the school superintendent could be maintained. This met with the approval of the school officials, and members of their department, which included the school architect and plant engineer, were assigned to work on this project.

"The same arrangement was made with the Bishop of the Spokane Diocese for inspection of the parochial schools. In each case, this proved to be a highly satisfactory arrangement. The team had complete authority of the Fire Marshal's office to make the inspections and necessary recommendations for correction of any hazards found. After setting up a list of requirements to cover schools in general, we then made inspections of each school, room by room, and gave individual requirements for that particular school." With this official support the group was assigned to work with Captain McDirmid and Lieutenant Hingston of the fire department.

At that time, the school board wanted a seven million dollar bond issue approved but it seemed doomed for defeat unless the voters were shown the necessity of correcting the fire hazards that then existed in the schools. In 1958 for the first time the voters had turned down a school bond issue and Chief Dunham felt that any future bond issue should carry an item concerning fire safety and the improvement of some of the older schools.

After completion of the inspection program it was announced publicly that at least $500,000 would be required to provide a minimum acceptable standard of safety in Spokane's older schools. In a letter to Superintendent of Schools William C. Sorenson which was also used as publicity in the school bond issue, Chief

This new exit which provides direct means of escape to the outside was added to the Sacred Heart School. A separate $200,000 was put into fire safety improvements in Spokane's parochial schools.

Dunham stated, "It is not our desire to appear dictatorial or to impose undue hardship on school officials or the taxpayer; but in view of recent disasters and the increasing occurrence of school fires, the time has come when this department can no longer be expected to accept full responsibility for the protection of the lives of our school children from fire under the conditions that now exist in many of the buildings." The seven million dollar bond issue was subsequently approved.

Some recommendations found in

JOINT FIRE SURVEY OF RIDGEVIEW SCHOOL

1. Provide outlet in Room 3 to prevent extension cord from lying across doorway.
2. Provide safety can for gasoline.
3. Sprinkle waste paper storage.
4. Check fire alarm switch and lock.

With the passage of the school bond issue, the school board was able to proceed with the corrective measures necessary to complete the school inspection project and its original purpose "of determining what steps were necessary to bring each school to a standard that would insure reasonable safety for the pupils in case of fire." (Quote from Chief Dunham's letter to Superintendent Sorenson.)

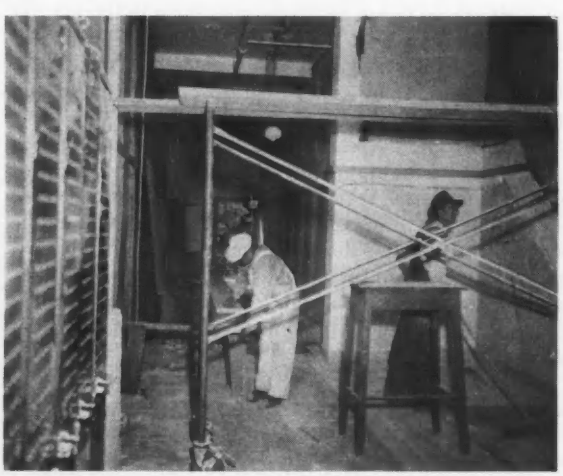
Some recommendations found in

JOINT FIRE SURVEY OF ARLINGTON SCHOOL

1. Do not store materials at exits from gym. All exits shall be clear at all times.
2. The main south entrance doors shall be free operating and dead bolts removed.
3. As a Class A building, the fire department requires that storerooms and other hazardous areas be equipped with a standard sprinkling system.

The inspections, which covered 80 schools, included thorough investigation of exit conditions in every school, fire hazards, fire prevention methods and the fire potential of each building. After the program was completed, Chief Dunham met with the inspection team where there was a difference of opinion among members, to discuss the requirements of the team. He then submitted to the Superintendent of Schools a list of requirements covering schools in general, followed by specific improvements concerning individual schools. The schools then hired architects to develop plans from these recommendations and requested bids to complete the projects.

The list of requirements which applied to all schools in general included specifications for such items as quantity and location of fire hose installations, the distance between window sills and ground level, fire detection systems, waste paper storage facilities, sprinkler protection of hazardous areas, protection of



Workmen remove open stairway and provide exit direct to outside at far end of hall.

Sprinkler system installed in North Central High School has water flow alarm connected to ADT system.

Some recommendations found in

JOINT FIRE SURVEY OF NORTH CENTRAL HIGH SCHOOL

AUTO SHOP:

1. All gasoline and combustible liquids now stored in storehouse shall be removed. In the future, only five gallons of gas in a safety container will be allowed.
2. Welding cart shall have a fire extinguisher attached to cart.

GYM:

1. Test sprinkler system.
2. Exits obstructed by canvas cover. Shall be made to comply with code.

fire escapes from weather, and the use of wire glass in transoms and relight windows. Other items specified by the inspection team concerned location and quantity of extinguishers, fire alarm switches, clear marking of emergency switches, smoking areas in school buildings, disposal of waste materials, and emergency exits.

Typical hazards found in the schools concerned inadequate fire escapes, ventilating systems, electrical wiring, storage of paint and other flammable materials, blockage of outside exits, and storage of waste materials in general, but particularly under stairways. The inspection team recommended improvements for many of the schools such as additional outside exits, the need for sprinkler systems, exit signs, handrails, fire extinguishers, and additional fire escapes to be protected from the weather.

Chief Dunham reported that by the time schools opened last September, approximately 60 per cent of the improvements had been made. Another twenty per cent was under way with the last twenty per cent being prepared for completion by the architects.

Sprinkler systems have been installed in several schools. At North Central High School where the city's largest fire safety program costing $165,000 was carried out, narrow stairways were removed, sprinkler systems were installed throughout the building, and doors leading to fire escapes were built.

In schools where the drop from the first floor window or fire door exit to the ground was more than eight feet, steps were constructed. Interior doors were built in classrooms with no outside fire escapes linking them to other rooms having such exits. Wired glass was installed in transoms, relight windows and other critical points throughout many schools to reduce the danger of fire and smoke breaking through ordinary glass.

Chief Dunham expressed his appreciation to Superintendent Sorenson by saying, ". . . the cooperation we have received from you and members of your staff who have worked with us has been the finest we have ever experienced; and for this, may I offer, from myself and all concerned, our sincere thanks."

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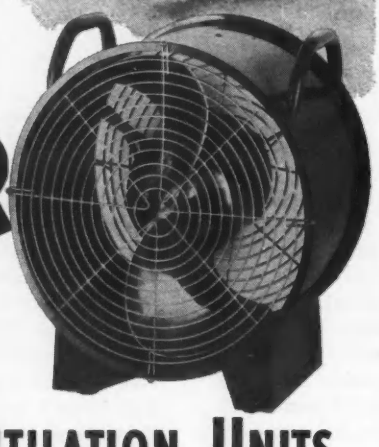

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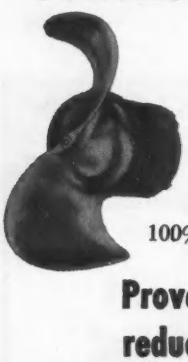

NOT JUST A FAN... but a powerful vacuum-action air screw... Super Vac is amazingly simple in operation, made possible by the efficient design of the **powerful propeller** that is the heart of the unit. This patented propeller produces 100% pulling or blowing power over its entire surface.

Proved method of saving lives while also reducing smoke damage

Fire departments **nation-wide** attest to the speed with which Super Vac provides **controlled ventilation**... so necessary in modern fire fighting. This multi-purpose unit primarily (1) gets rid of smoke and fumes through its powerful vacuum action... or, (2) furnishes a tremendous blast of fresh air into the smoke-congested area, reducing the dangers of combustion and asphyxiation. Although one unit is often sufficient, **complete controlled ventilation** can be more speedily accomplished by using two or more units... one or more units **pulling out the smoke and fumes** while the remaining units **blow in a steady supply of fresh air.**

★ **Highly portable... operates in any position**
★ **Design permits vertical stacking**
★ **Made in 16" and 24" sizes**
★ **AC or DC, regular or explosion-proof motors**
★ **Choice of red or white baked enamel finish**
★ **Running board mounts available**

For complete details and specifications on

... contact your fire equipment dealer

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SUPER VACUUM

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Fire Training in Quebec

PROVINCIAL Fire Commissioner Edouard Gaudette of Quebec recently sent in a report on fire training in his province which arrived too late for inclusion in the annual survey of firemen's training that appeared in the November issue of FIREMEN magazine. A total of 1,500 fire fighters received training in Quebec last year through a year-round mobile fire school. They obtained special training on the use of fog nozzles. Special fire control tests were held in several locations in addition to five industrial fire brigade training sessions.

Plans for the future include a two-month training school for fire department officers at the Forestry School in Duchesnay.

Retired Chief

CHIEF John P. Samsell has retired from the Morgantown, West Virginia, Fire Department after nearly 30 years of service. He has been replaced by Chief George Sweitzer, Jr., who topped a competitive examination list.

Recently, the Morgantown Fire Department has been sending out weekly bulletins describing its fire prevention and inspection activities. Included with the bulletins are general instructions to fire department personnel stressing important points of the year-round program.

SPARKY SWEAT SHIRTS

Children's sizes only — 4 thru 12

Popular SPARKY emblem in bright Day-Glo red, yellow and black featured on high quality white cotton T-shirts and sweat shirts.

SWEAT SHIRTS **$2.25** postpaid

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Free list of all SPARKY items on request

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Growing . . .
Growing . . .
Growing . . .

IN THE past ten years the number of fire department memberships in NFPA has doubled and circulation of FIREMEN magazine has climbed more than fifty per cent. The magazine now has the largest circulation of any fire journal and reaches fire departments in more than fifty countries.

It seems likely that the coming "golden '60's" will bring even more phenomenal growth. In each of the past twelve months there has been a surprising influx of fire departments joining NFPA for the first time. A key factor in this upsurge has been the work of individual members of NFPA, who, when visiting municipal fire departments, have taken the trouble to explain the organization and operation of NFPA and its continual work in the interests of fire departments. These individuals are fire chiefs, training instructors, rating bureau personnel, technical men in industry, and other typical members of the Association. Each month, NFPA *Fire News* carries a listing of the names of these persons who are credited with enrolling one or more members. The steady, continual growth of NFPA provides one measure of the significance of their contribution. Here are some of the fire departments that recently joined NFPA.

California: Huntington Park Fire Department, Huntington Park.

Connecticut: South Killingly Fire Company, Danielson; Guilford Fire Department, Guilford; Watertown Fire Department, Watertown.

Florida: Deerfield Beach Fire Department, Deerfield Beach; Eustis Fire Department, Eustis.

Illinois: South Wheatland Fire Department, Decatur; Homer Township Fire Department, Lockport; Tinley Park Volunteer Fire Department, Inc., Tinley Park.

Indiana: Fountain City Fire Department, Fountain City; Yorktown-Mt. Pleasant Township Fire Department, Yorktown.

Kentucky: South Oldham Fire Department, Inc., Crestwood.

Louisiana: Fire Protection District No. 2, Alexandria.

Maine: Old Orchard Beach Fire Department, Old Orchard Beach.

Maryland: Capitol Heights Volunteer Fire Company No. 1, Capitol Heights.

Massachusetts: Bedford Fire Department, Bedford; Gardner Fire Department, Gardner.

Missouri: Kirkwood Auxiliary Fire Department, Kirkwood.

New York: Claverack Fire Department, Claverack; Sayville Fire District, Sayville.

North Carolina: Rolesville Rural Fire Department, Rolesville.

Nova Scotia: Sydney Fire Department, Sydney.

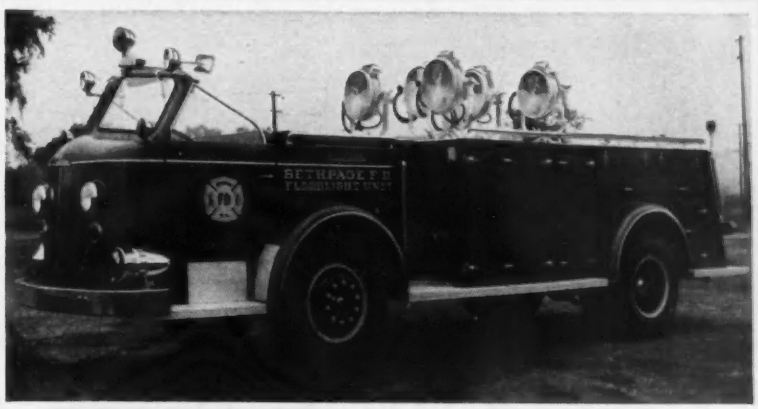
Pennsylvania: Logan Township Fire Company No. 1, Altoona; Lima Fire Company No. 1, Lima.

Quebec: Pointe-Claire Fire Department, Pointe-Claire.

South Carolina: Union Fire Department, Union.

Vermont: Arlington Fire Department, Arlington.

Washington: Ephrata Volunteer Fire Department, Ephrata; Omak Fire Department, Omak; Quincy Fire Department, Quincy; Wahkiakum County Fire Protection District No. 2, Skamokawa.



KOHLER ELECTRIC PLANT

for fire truck floodlights

Model 10R61
10 KW, 115/230 volt AC. Remote start.

Mobile lighting for night fires is amply provided by this Bethpage, New York, floodlight unit, with current supplied by a reliable 10 KW Kohler electric plant. Kohler models offer quick-starting, rugged power for rural and city fire department trucks. Larger, stationary models maintain alarms, communications when emergencies cut off normal electricity. Sizes to 100 KW, gasoline and diesel. Write for folder E-16.

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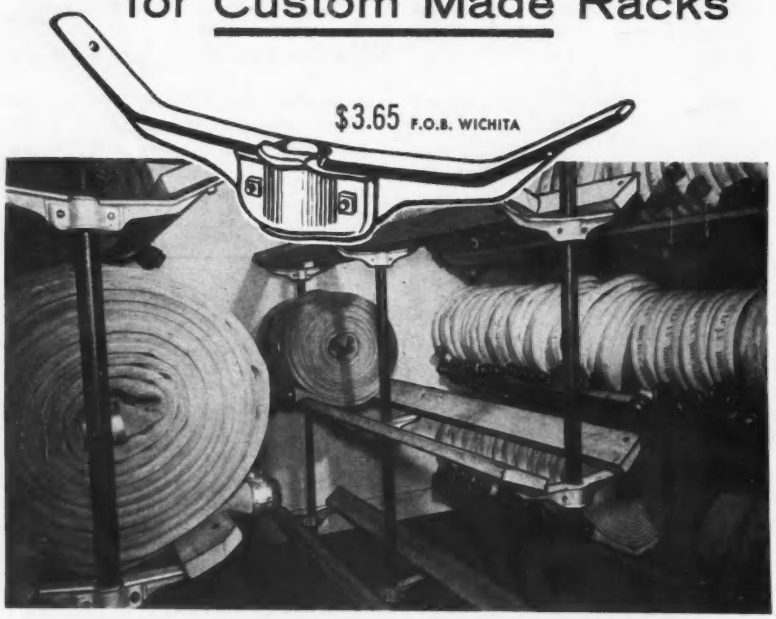

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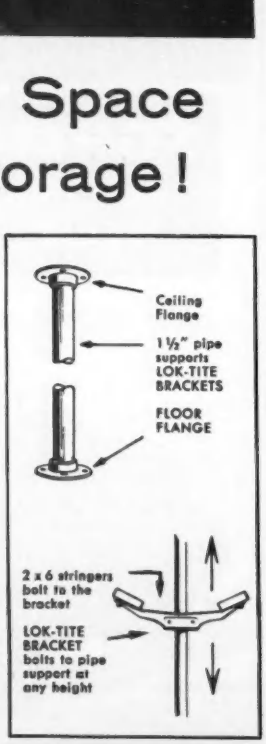
Convert Waste Space To Valuable Storage!

Lok-Tite fire hose brackets provide storage racks in odd dimension areas where ready-made storage will not fit. Encourage good housekeeping practices . . . assure easy hose inspection and correct ventilation by building sturdy storage with Lok-Tite brackets approved by hose manufacturers and fire departments everywhere.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FLOOR FLANGE
2 x 6 stringers bolt to the bracket
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- Simple to install
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"How to Organize a Sparky's Fire Department"

THIS is the title of a new NFPA folder that was prepared especially for fire departments and other organizations who want to start a Sparky unit or any form of junior fire department. It outlines the objectives and different forms of a junior fire department and describes in detail four recommended steps for starting a junior fire unit and keeping it going.

The Sparky guide was written for officials, committees and instructors who plan and conduct junior fire department programs. Single copies are available at no charge from the NFPA Public Relations Department, 60 Batterymarch Street, Boston 10, Massachusetts.

Fire Chief Wanted!

THE Board of Selectmen, Village Precinct of Hanover, New Hampshire, is accepting applications for the position of fire chief in the Village. Hanover is a college community and the home of one of the largest hospitals north of Boston, Massachusetts. Some twenty million dollars of new construction is scheduled for the next few years.

According to Robert D. McLaughry, secretary of the Board of Selectmen, "the responsibility of the chief in matters of fire prevention, fire fighting and rescue work would require a man well trained professionally to meet the many possible emergencies that might arise. The fire department consists of four full-time firemen plus a volunteer hose company of about forty. The recruiting of volunteers and carrying out of a training program geared to modern techniques is an extremely important phase of responsibility

for the chief. We are anxious to receive inquiries and applications from anyone who feels that he can meet the qualifications for the job."

Readers who wish to apply or who wish additional information should write to Secretary McLaughry, c/o Board of Selectmen, Village Precinct of Hanover, New Hampshire.

Christmas Fire Safety Aids

SPECIAL materials for fire safety are now available from NFPA to be used during the Christmas season. The colorful green and red Sparky Christmas poster can be obtained for $5.00 per 100 and $25.00 per 1,000. Sparky's 1960 fire safety calendar is $5.00 for 100 and $35.00 for 1,000. A reprint from the NFPA *Quarterly*, "Christmas Tree Hazards and Treatments," is 25 cents per single copy and $18.75 per 100 copies.

Other fire safety and fire prevention materials that may be used all year round include: Sparky's official home inspection blank at $1.00 for 100 copies and $7.50 for 1,000 copies; the Home Fire Safety check list available at $1.50 for 100 and $10.00 for 1,000; Sparky's coloring books at $5.00 for 100 and $45.00 for 1,000; and Sparky's metal lapel tabs at $2.00 per 100 and $15.00 per 1,000.

A one-minute Sparky fire safety film is available in 16 mm. for $5.00 and in 35 mm. for $9.75. Free newspaper mats in one or two column widths may also be obtained with the above materials by writing to the NFPA Publications Department, 60 Batterymarch Street, Boston 10, Massachusetts.

You can get

FIREMEN magazine

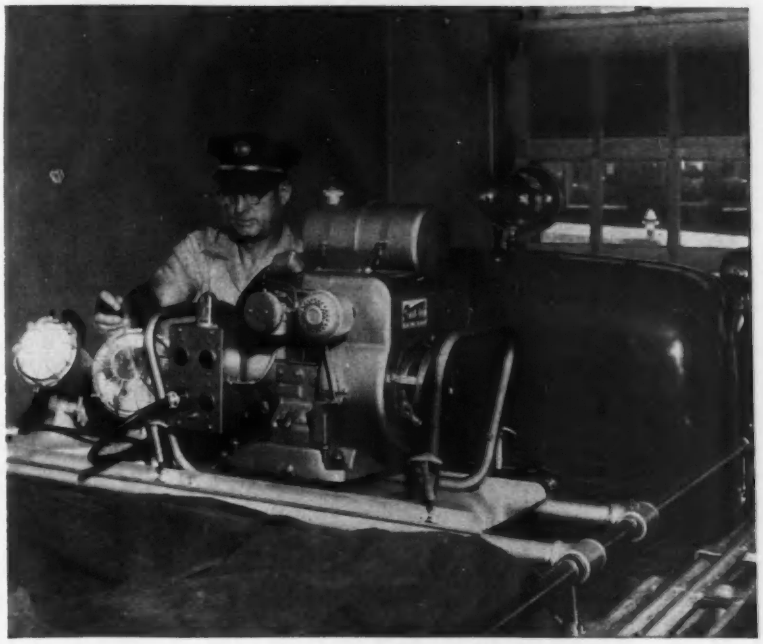
for all of your fire fighters

through membership in NFPA

Write to:

National Fire Protection Association
60 Batterymarch Street
Boston 10, Massachusetts

Onan NEWS REPORT



Department uses two Onan plants to fight fires, and hurricanes, too!

The 1,500-watt portable Onan plant mounted on the rig above is strictly a fire-fighting tool for the Oxford, North Carolina department. Quickly detachable from the truck mount, it can be carried right up to the fire site to operate floodlights and tools.

The Onan 10,000-watt standby plant below helps fight fires and other disasters. In addition to assuring power for police radio, headquarters lighting, and the air-compressor fire signal system, it also serves the local Civil Defense organization, guaranteeing radio communications when a hurricane or other disaster strikes the community.

10KW PLANT HANDLES ALL ESSENTIAL NEEDS

Radio, air compressor and lights are on the emergency circuit. A flip of the switch starts the plant. Onan also supplies automatic start-stop transfer controls for permanent installations where personnel are not always on duty.

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Los Angeles to the Rescue

(*Continued from page 18*)

nostic treatment. For two weeks the men rode each day with veteran hospital ambulance crews for a full shift to gain actual field experience in ambulance techniques. The department's Bureau of Personnel and Training developed and issued a rescue-ambulance procedure manual and conducted a training program for chief officers and company commanders in Division IV. Included in the training was a California Department of Education training film on childbirth together with comments by a senior Receiving Hospital doctor.

The stations in North Hollywood, Sherman Oaks, Tujunga, Pacioma, Canoga Park and Northridge were selected to house the new rescue-ambulances. More telephones were added in these stations so that rescue-ambulance calls would not disturb other units in the stations. Tie-in lines from the Valley Police Division dispatcher to fire department headquarters at Van Nuys were also installed and four operators were added to the Van Nuys Signal Office staff. It was necessary to construct additions to several stations to properly house the apparatus and extra personnel.

Since the new trucks were not only to be ambulances but also would carry a variety of rescue equipment, the department drew up its own specifications for the apparatus. Because time was limited, the department converted for temporary rescue-ambulance service an old Buick relief rescue truck, one ambulance loaned by Central Receiving Hospital, one panel truck from the Rescue Service, and one of the Valley's existing rescue unit panel trucks. These temporary conversions plus the department's two Cadillac ambulances used as rescue vehicles in the downtown and Hollywood districts, enabled the department to provide the new service on schedule.

The Public Relations Section directed by Battalion Chief Thad Whippo conducted a public education program to advise the Valley residents of the forthcoming changes. This program was essential to reassure the public that it would have not only continued protection but also better service. There was considerable apprehension in some organized groups that the fire department could not handle emergency ambulance service in addition to its many other emergency responsibilities.

Deputy Chief Marvin A. Meador reports that more than 55 per cent of the calls received by the Valley Signal Office are for rescue-ambulance service. Statistics for the 1957–58 fiscal year show that the six rescue ambulance companies responded to 7,501 alarms — 3,820 of them for automobile accidents and 868 for miscellaneous accidents. There were 523 heart calls, 177 for overdose of drugs, 62 for burns and, it is interesting to note that in the Valley area where there are many swimming pools — 23 drowning calls. Frequently, all six units have been on response at one time.

"One of the reasons we have received many compliments for the fine service has been the caliber of our personnel," states Chief Meador. "They are career men devoted to duty." He points out that most of the men on the rescue-ambulance service volunteered. They work a 24-hour shift, the same as other fire fighters. They wear white coats, regulation blue pants, and no hats. The LAFD currently has a committee studying

White jackets are worn over the regular uniform by the L.A. firemen-ambulance attendants.

The earliest piece of rescue equipment operated by the Los Angeles Fire Department Rescue Service was this 1928 Model GMC panel truck. Note variety of equipment displayed outside.

possible adoption of a distinctive emblem or insignia to be worn by the men assigned to the rescue-ambulance units.

A sidelight of the rescue-ambulance is the Godfathers' Club composed of firemen who have aided in the delivery of a baby. Last year 30 babies were delivered by firemen assigned to the units.

In addition to this new service, the Los Angeles Fire Department continues to provide conventional rescue service in the remainder of the city using two Cadillac ambulances and three panel trucks. The truck companies in Westchester near International Airport, Venice and Wilmington in the harbor area carry resuscitators. Two heavy duty rescue or emergency trucks operate in the industrial district and Hollywood. These rigs carry almost every piece of heavy rescue equipment available from power cutting tools to jackhammers and hydraulic jacks. Squad 23 in the downtown high value area carries special cutting equipment as well as gas masks and can be dispatched to anywhere in the city where manpower is needed. During a recent tragic accident in which a parochial school bus plummeted off a hill, the Los Angeles Fire Department responded with an emergency truck, Squad 23, truck and engine companies, and one rescue-ambulance from the Valley to help remove the many injured children.

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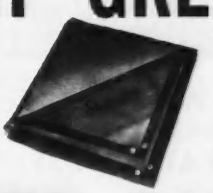

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Fire Beyond Control!

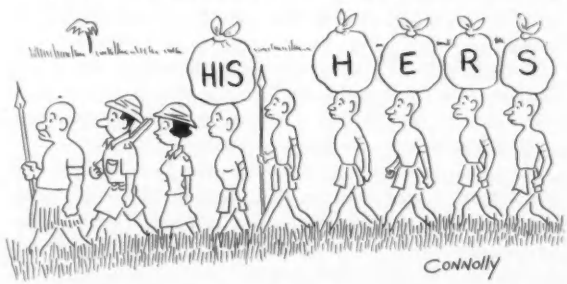
(*Continued from page 17*)

It is interesting to note the department's operation in combating the rapid spread and numerous explosions during this fire. As previously mentioned, first alarm response included the operations of Engine 13. Engine 22, which also came in on first alarm, connected to a hydrant 500 feet east of Building No. 9 and stretched a 700-ft. line to the building. In addition, members of this company laid 400 feet of 2½-in. line to supply two lines to Engine 15 on relay, a single line to a deluge set and one hand line to the east end of the building.

Engine 19 took over the hose lines from Engine 15, then later abandoned this position, went to the waterfront to start drafting and supplied three long lines at 150 pounds pump pressure. The crews of Ladders 4 and 8, also coming in on the first alarm, assisted engine companies with hand lines and set up deluge sets. At one point during the fire, members of Ladder 4 tried to remove the metal siding from Building No. 9 where antifreeze solution was stored in one quart and gallon cans. Later a wrecking truck and the two squad trucks were utilized for this purpose with their winches pulling the wall section down so fire fighters could direct hose streams into the fire.

Second and third alarm companies followed similar procedures to the first responding apparatus in taking positions, stretching lines and withdrawing as operations became impossible. Members of Salvage 1 and the recalled off-duty men helped in moving hose and relay operations. Later Salvage 1 and Salvage 2 set up floodlights as nighttime operations became necessary.

Several days after the fire was out it was generally determined that the fire had started in Building 4 from an unusual cause. One conclusion was "that atmospheric conditions of prolonged heat of over 90 degrees F may have increased internal pressure in some of the material stored causing a seepage of fumes which became ignited in some manner." The warehouse buildings were considered totally destroyed with loss estimated in the vicinity of one million dollars. A week after the fire three railroad cars were brought into the area and the difficult task of removing the sodium cyanide from Building 6 was begun by plant personnel.



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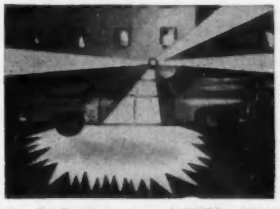

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Please send bulletin and information.

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"Operation School Burning"

(*Continued from page 11*)

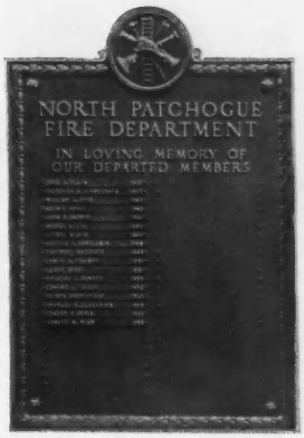
end. For detailed temperature and pressure readings not shown on a graph, figures can be taken directly from the tabulated data for this test shown on the pages following each graph. From our sketch (page 11) of one particular test we can deduce the following:

1. Untenable smoke conditions were reached in three minutes on the first floor and 6½ minutes on the third floor.
2. Untenable heat conditions were reached in 8 minutes on the first floor and 11 minutes on the third floor.
3. Untenable smoke preceded untenable heat by approximately five minutes.
4. Maximum pressures reached were .15 inches of water on the third floor in 15 minutes.
5. When untenable smoke conditions were reached in 6½ minutes on all floors, the test fire was only 300 degrees F. When untenable heat conditions were reached in 11 minutes on all floors, the test fire was 1,335 degrees F.
6. The fire behavior may be followed by tracing the times of untenable smoke and heat as indicated by the arrowed line. Heat and smoke traveled up the east stairway from the test fire laterally through the first floor corridor east to west, up the west stairway and laterally west to east through the second floor corridor, up the east stairway to the third floor and laterally to west end.

This same treatment can be applied to other tests including data on venting, sprinkler or detector performance, or other data that seems pertinent to the test considered. It can be as flexible and detailed as the reader requires.

Municipal Fire Chief

Applications for the position as Chief of the Fire Service, involving a Department composed of twelve paid and fifty volunteer fire fighters, 85-ft. ladder truck, 3 pumpers and rescue ambulance, may be filed at the Office of the City Clerk-Treasurer, 8 Columbia Avenue, Takoma Park, Maryland, before January 31, 1960. Minimum starting salary must be stated in application with complete resume of qualifications, past experience, reference, etc.



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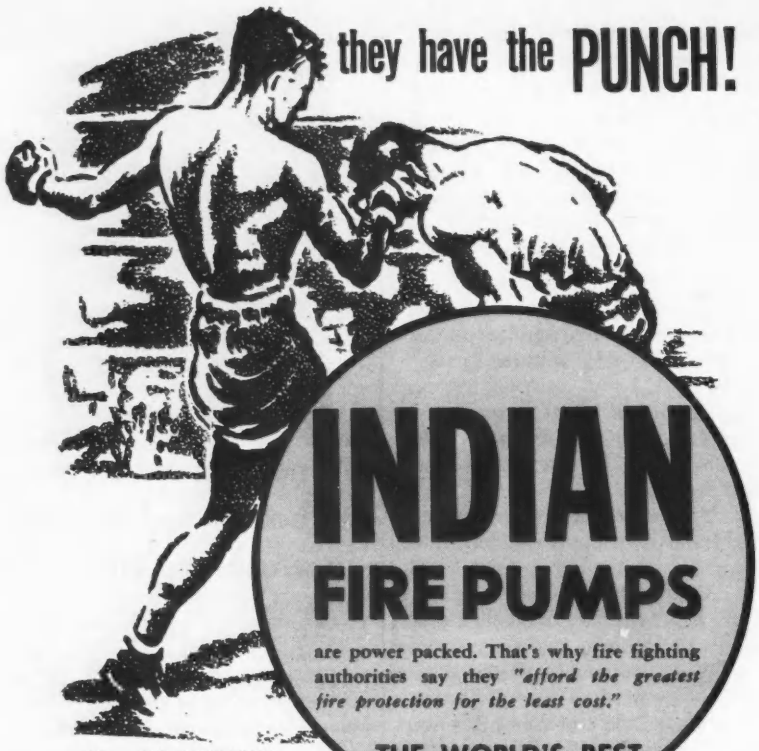

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Radiation Detector

AN INTERESTING device for detecting nuclear radiation and giving an alarm is now being marketed by Controls for Radiation, Inc., 130 Alewife Brook Parkway, Cambridge 40, Massachusetts. Called "FIDO" (Fallout Intensity Detection Oscillator), it is a miniature, self-contained dose-rate alarm, about the size of a cigarette package complete with batteries and sound signal. It is activated by nuclear radiation at levels as low as 0.5 roentgens per hour and gives a loud "whine" which rises in pitch as radiation increases. The sound is audible many feet from the instrument. This is the sort of device that a fire fighter could wear attached to, or in the pocket of, his turnout coat. If the device was activated during a fire, he would know immediately that he was in a radiation area and, through familiarity with the signal, he could determine to some extent the intensity of the radiation.

The device has been tested for operation in temperatures between 32° and 100° F. At present, the unit is not enclosed by a waterproof case but the solid-state components are not harmed by water, according to the manufacturer, and the only precaution that ordinarily need be taken after immersion will be the removal of batteries. The battery life is in excess of 100 hours and the device has an indefinite shelf life.

Actual size of the unit is 3- by 2¼- by ⅞-in. and it weighs less than seven ounces including the sound alarm and battery. A solid-state sensing element is used for detecting radiation and mercury cell batteries activate the alarm. For detailed information write to the manufacturer at the above address.

Know Any "Hams"?

IF YOU know an amateur radio operator who has performed some outstanding public service during 1959, you probably would like to nominate him for the 1959 Edison Radio Amateur Award. Nominations may be submitted by anyone familiar with a public service performed by a licensed U. S. radio amateur. Deadline for nominations is January 4, 1960, and they should be addressed to the secretary of the Edison Radio Amateur Committee, General Electric Company, Owensboro, Kentucky. Fire departments certainly should know radio amateurs worthy of nomination.

Nominating letters will be reviewed by a panel of judges and must include complete details of the public service performed. A guide to preparing nominations is available from the Edison Radio Amateur Award Committee, General Electric Company, Owensboro, Kentucky.

Judges for the 1959 award include E. Roland Harriman, chairman of the board, American National Red Cross; Rosel H. Hyde, commissioner, Federal Communications Commission; and Goodwin L. Dosland, president, American Radio Relay League.

The 1959 award winner will receive a $500 cash prize, the Edison Award trophy cup, and will be honored at a Washington, D. C., banquet in February, 1960.

"Holocaust!"

HENRY HOLT and Company has published a new book with the above title. It was written by a newspaper reporter, Paul Benzaquin, and it is a story of the well-known tragedy of the Cocoanut Grove fire in Boston, Massachusetts, on November 28, 1942.

In general, it describes the experiences of a number of people who were in or near the night club at the time of the fire. It goes into considerable detail of the suffering of victims and also describes the inquiry and trials that followed the fire. The book is not intended for, nor will it be satisfactory to, the technical reader but it should be impressive to the general reader who is unacquainted with the tragedy of the Cocoanut Grove fire. Priced at $3.95, it is available at bookstores and libraries.

DECIBELS when and where you want them—are what count in rating a siren!

LET'S FACE FACTS!

—few warning signals can approximate the sound output of FEDERAL Class Q Coaster Sirens. ***LET'S FACE FACTS***—50 watts or 3 thousand watts inaccurately measures sound output of an electronic siren. FEDERAL'S INTERCEPTOR, producing 96 decibels at 100 feet, is the best performer in this class of audible signal.

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New Chiefs' Association

FIRE chiefs in the state of Missouri met recently in Jefferson City and adopted a constitution, by-laws and rules of order for the Missouri Association of Fire Chiefs. The first group of officers elected were: Chief John F. Sullivan, Jefferson City, president; Chief Larry W. Graves, Sunrise Beach, first vice president; Chief George I. Smith, Raytown, second vice president; Chief Jack Adams, Kirkwood, secretary-treasurer; and as directors, Chief Clyde O. Long, Carthage; Chief Clarence L. Babcock, Kirksville; and Chief Alden L. Campbell, Gashtown.

Membership in the association is composed of fire chiefs in the state of Missouri as active members. An annual convention and election meeting are planned for the future. Applications for membership may be obtained from Secretary Jack Adams, 410 Gill Avenue, Kirkwood.

Booklet on Home Inspection

DALE K. AUCK, of the Federation of Mutual Fire Insurance Companies, 20 North Wacker Drive, Chicago, Illinois, reports that there has been great demand for the booklet, "Home Inspections by Fire Departments," recently released by the Federation. The booklet describes the inspection programs of a number of fire departments and procedure. In addition, examples are given to help fire fighters correct hazards. Fire departments or interested individuals can get single copies of the manual free by writing to the Federation. It should be especially helpful for new dwelling inspection programs.

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P.O. Box 1425F Providence, R. I.

Flanagan Named in Connecticut

THE Connecticut State Board of Education recently appointed Andrew Flanagan to the position of department head in the fireman training program, filling the vacancy occasioned by the retirement of Chief John Pachl.

Born in New Haven, Flanagan joined the fire department of that city in 1931 and retired in 1957 as a battalion chief. During that time he took an active part in the development of the New Haven Fireman Training School and was appointed chief instructor in 1954.

From 1950 to 1952 he served as deputy chief fire instructor for the Suffolk County Vocational Board in Suffolk County, L. I., New York. He was appointed deputy director of civil defense for the city of New Haven in 1955. He later served with the plant protection force of Hamilton Standard Division of United Aircraft Corporation and prior to coming to the Connecticut State Department of Education, he was with the State Office of Civil Defense.

Christmas Folder

THE popular NFPA Christmas folder, "A Happy . . . and Fire Safe . . . Christmas," is now available from the NFPA Publications Department. It can be obtained at the following prices: $2.50 per 100 folders; $20.00 per 1,000 folders. Imprinting space is provided on the back of each folder.

Address your request for Christmas Folder G24D to the NFPA Publications Department, 60 Batterymarch Street, Boston 10, Mass.

Promotional Study Course for All Ranks

The National Preparatory Institute offers a course of instruction in Fire Prevention, Fire Protection and Fire Fighting which will help you to improve your knowledge of fire field subjects and assist you in your studies for promotion.

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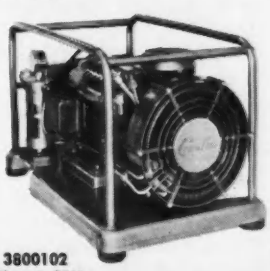
SINCE 1836

From one chief to another . . .

CHIEF LUKE J. BERGAN, AUBURN, N. Y., SAYS:

"I would recommend the Cornelius Air Compressor to all Fire Departments using demand masks"

Chief Bergan adds: *"The Cornelius Air Compressor is all that it is advertised and we are very pleased with it. Before purchasing one we had to send away for refills and wait several days for return of the cylinders. Now when our tanks are used, sometimes not entirely empty, we refill them and they are always ready."*



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3000 PSI — 4 CFM
Weight complete — 120 lbs.

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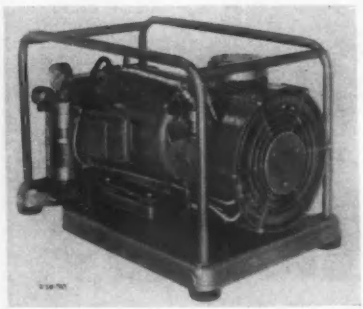
this month's

EQUIPMENT NEWS



High Pressure Air Compressor

Pictured here is the new 120-pound Model 3800102 high pressure air compressor, one of the 380 series, now marketed by *Cornelius Company*, 557 39th Avenue, N.E., Minneapolis 21, Minnesota. Departments with demand type breathing equipment should obtain complete data from manufacturer.

•

Nielsen-Rionda, Inc., 40 John Street, New York 38, New York has a two-page illustrated catalog on "Sta-Brite" badges, free on request. . . . Attractive, high-quality bracelets and earrings for the ladies in the fire service motif — for gifts, awards and prizes — are made by *Hook-Fast Specialties, Inc.* Box 1425F, Providence, Rhode Island. . . . And for Christmas, what child wouldn't like a lovable, durable "Sparky" fire dog doll? Write to *Roberts Company*, Box 86D, Wayland, Massachusetts. . . . *Acme Protection Equipment Company*, 1279 Kalamazoo Street, South Haven, Michigan, has a new, free brochure with information on gas mask selection. . . . The Exploratory Committee of F.D.I.C. has produced eight firemen's training films in sound and color. Write for details to *Steve Smith Pictures*, 623 Kansas Avenue, Topeka, Kansas.

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Elkhart's No. 428 Saves Time and Knuckles

Just tap it in, twist and out comes your expansion ring with the aid of Elkhart's new two-prong expansion ring extractor. Frees rings without slipping or damage to coupling. Prongs are made of special heat-treated tool steel, chromium plated. Write to *Elkhart Brass Manufacturing Company, Inc.*, 1302 West Beardsley Avenue, Elkhart, Indiana.

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You can easily make your own or additional hose storage racks with Lok-Tite brackets. Drop a line to *W. B. Manufacturing Company*, Dept. F, 157 North Waco, Wichita, Kansas. . . . A lightweight, simple-to-use respirator for fire and rescue service is now made by *Western Anaesthesia Equipment Company, Inc.*, 2553

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THE ALL NEW

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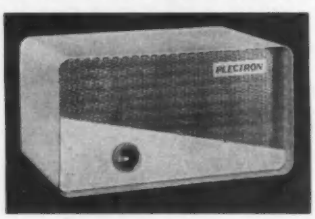

The PLECTRON Sentry

Place a tone activated PLECTRON F.M. Radio Receiver in each fireman's home and send emergency voice messages direct from your present 2-way base transmitter into every fireman's home.

Benefit from selective calling, silent alarms, and fast, efficient alerting.

Receivers available for any radio frequency in the 25-54 and 152-174 megacycle bands, and for activation from any tone frequency between 500 and 3000 cps.

CHECK THESE FEATURES:

- Fully transformer powered.
- Crystal frequency control.
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- Designed for "Narrow-Band" reception.
- 1 MV Sensitivity (10 miles without outdoor antenna).
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Consider the products advertised in this issue.

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Box 444D, Wayland, Mass.

Middlefield Road, Redwood City, California. . . . Versatile rescue, emergency and special duty truck bodies are featured by *Morysville Body Works, Inc.*, 813 South Reading Avenue, Boyertown, Pennsylvania. . . . Your office and library will find the new Rockwood fire fighting products catalog useful. Drop a card to *Rockwood Sprinkler Company*, 423 Harlow Street, Worcester 5, Massachusetts. . . . Many good ideas on equipment for your ambulance, rescue and first-aid vehicles are described and illustrated in a new twenty-page catalog announced by *Ferno Manufacturing Company*, 6th and Pine Streets, Greenfield, Ohio.

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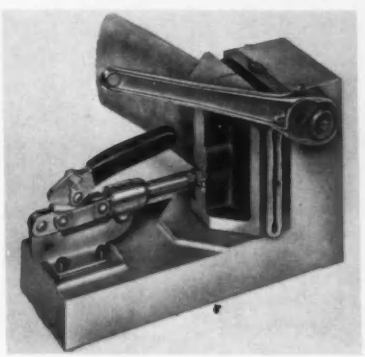

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Here is a valuable tool for every fire department — the new Bell & Pihl "Straight Edge" Hose Cutter — in bench or portable model. Made of one-piece, special alloy cast aluminum in smooth finish, with all parts rustproofed, it has a toggle action clamp to hold hose in position firmly. The tempered tool steel knife easily cuts through the toughest of fire hose. Unit has an adjustable clamp for all flat hose up to 3-in. size. An extra knife blade is provided although hundreds of cuts can be made before need of sharpening. Write to *Bell & Pihl Company*, 17 Wyman Street, Arlington 74, Massachusetts.

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1936 Hale Triple Combination Fire Truck

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How Many Sprinkler Heads Do You Carry?	May	26
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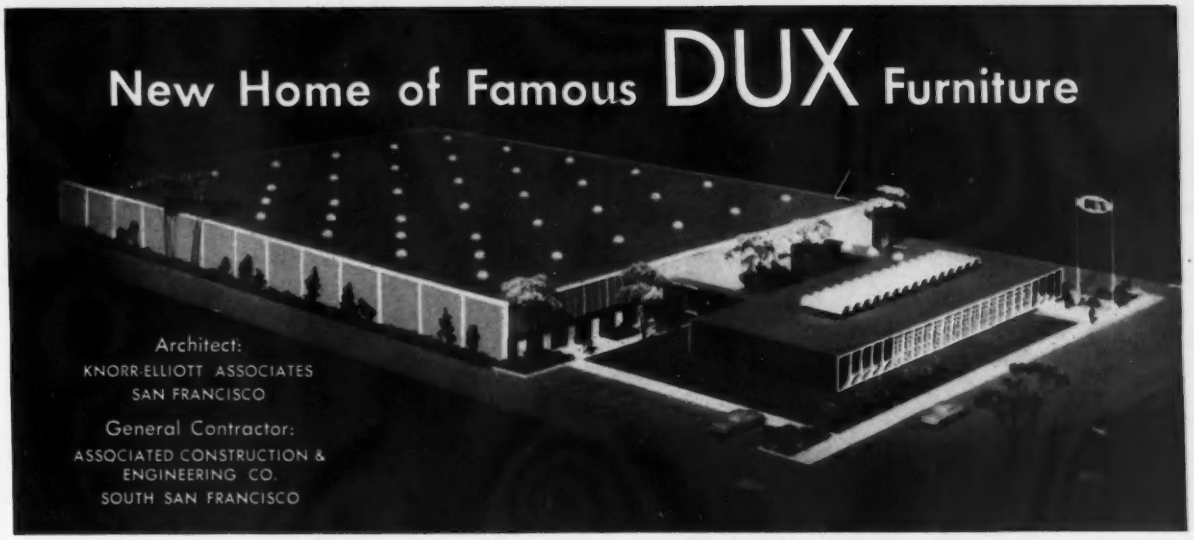

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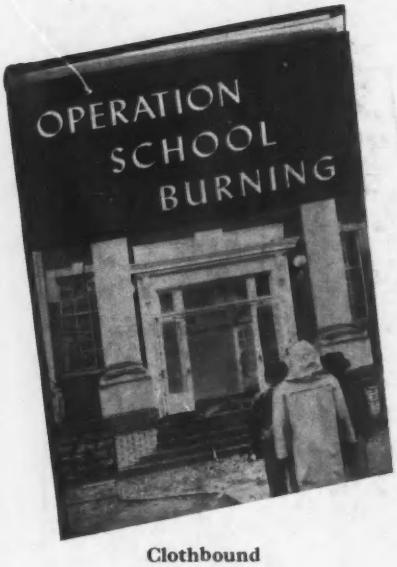

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